CLARK UNIVERSITY

ACADEMIC CATALOG

1993-94

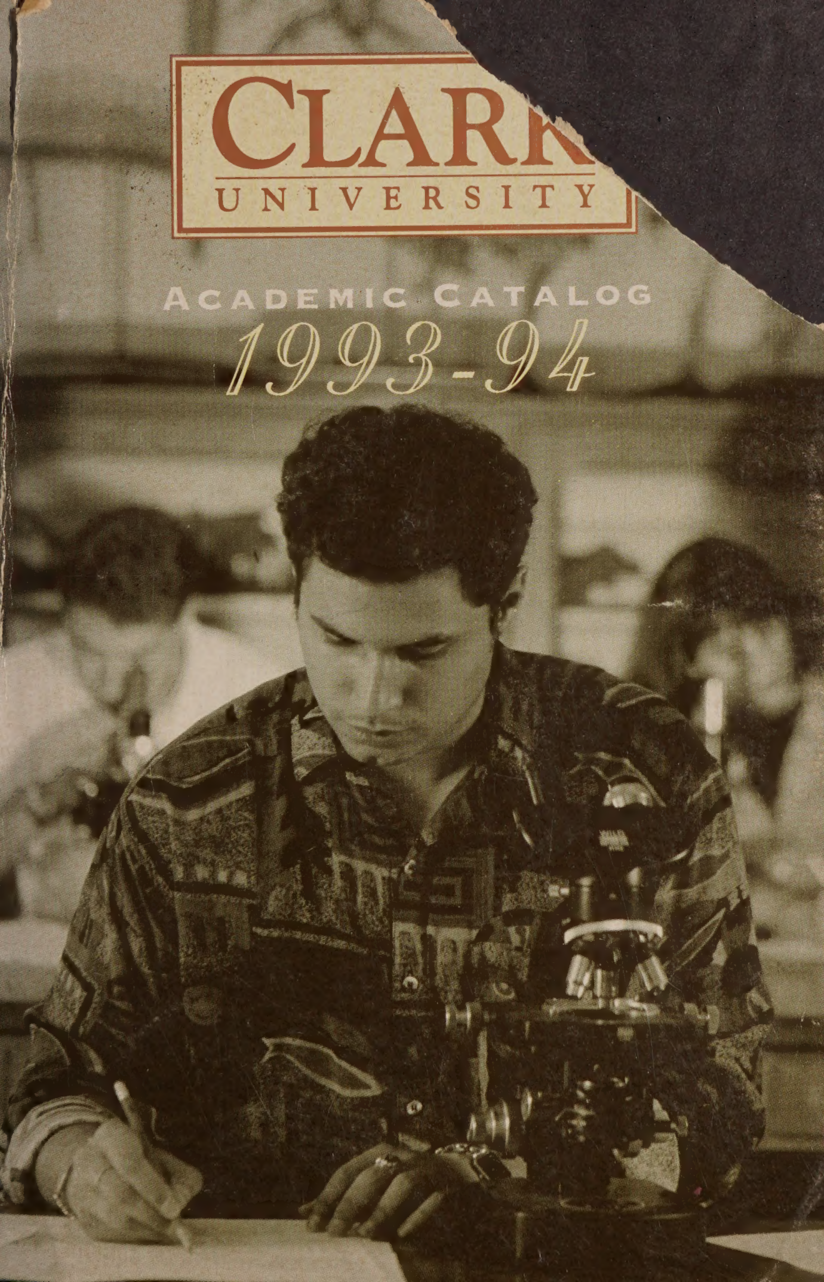

Table of Contents

- **About Clark University** ... 1
  - The Undergraduate College ... 3
  - Academic Programs ... 3
  - Special Opportunities for Study ... 8
  - Academic Facilities and Resources ... 14
  - Requirements for a Bachelor's Degree ... 18
  - Honors and Awards ... 23
  - Tuition and Other Charges ... 24
  - Student Services ... 27
  - Athletics ... 30
  - Admission ... 31
  - Undergraduate Financial Assistance ... 34

- **The Graduate School** ... 37
  - General Information ... 37
  - Inquiries and Admission ... 38
  - Master's Programs ... 39
  - Doctoral Programs ... 41
  - Grading Policies ... 44
  - Graduate Student Services ... 44
  - Graduate Tuition and Other Charges ... 45

Departments and Courses

- First-year Seminars ... 50
- Ancient Civilization ... 54
- Asian Studies ... 58
- Astronomy ... 61
- Biochemistry and Molecular Biology ... 62
- Biology ... 66
- Chemistry ... 78
- Classics ... 85
- Communication Studies ... 88
- Comparative Literature ... 95
- Computer Science ... 102
- Cultural Identity and Global Processes ... 108
- Economics ... 111
- Education ... 121
- Engineering ... 133
- English ... 135
  - Writing Program ... 139
- Environment, Technology and Society ... 151
- Foreign Languages and Literatures ... 162
  - Classics ... 165
  - French ... 166
  - German ... 172
  - Hebrew ... 175
  - Japanese ... 177
  - Russian ... 178
  - Spanish ... 179
- Geography ... 184
- Geology ... 213
- Government and International Relations ... 215
- History ... 233
- International Development and Social Change ... 260
- International Relations ... 277
- Jewish Studies ... 279
- Management ... 281
  - Five-year B.A./M.B.A. ... 283
  - Master of Business Administration ... 288
  - Master of Health Administration ... 303
- Mathematics and Computer Science ... 309
- Neuroscience ... 318
- Peace Studies ... 321
- Philosophy ... 324
- Physics ... 338
- Psychology ... 348
- Sociology ... 378
- Visual and Performing Arts ... 385
  - Art History and Criticism ... 386
  - Studio Art ... 394
  - Music ... 400
  - Screen Studies ... 409
  - Theater Arts ... 414
- Women's Studies ... 421

- **Faculty** ... 431

- **The Corporation** ... 441

- **Academic and Administrative Officers** ... 442

- **Academic Calendar** ... 446

The following is intended as an illustration of courses and programs that are typically offered or have been offered recently at Clark. Inclusion in this listing does not constitute a promise or guarantee that the course or program will be available in a particular semester or academic year. Rather, in each semester a wide selection of courses from this catalog will be offered. From time to time new courses, curricula, or instructors may be added or changed. Please consult the *Class Schedule* and *Addenda to the Class Schedule* published by the Office of Student Records for a listing of the courses and instructors in each term.

Clark University is accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England states. Membership in the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

It is the policy of Clark University that each individual, regardless of race, color, sex, sexual orientation, religion, national origin, age, or handicap, shall have equal opportunity in education, employment, or services of Clark University. The University encourages minorities, women, Vietnam veterans, the handicapped, and persons between 40 and 70 years of age to apply.

For information:
Clark University
950 Main Street
Worcester, MA 01610-1477

Telephones:
(Switchboard) 508-793-7711
(Admissions) 508-793-7431
(Graduate School) 508-793-7676

This catalog is published by the Clark Communications Office.

About Clark University

For the spirited, independent, inspired learner, Clark University can offer the best of many worlds: combining the advantages of the intimate, liberal arts college and the distinctive, research university; connecting the world of a major New England city with that of a truly international university; prompting students to venture beyond classroom and laboratory into the community, across cultures, and even across the globe. Clark takes pride in its university as a community of shared values, which prizes individual differences, originality, and flexibility. Above all, it is a place where people feel comfortable trying out new ideas.

In fact, the special strength of Clark's undergraduate and graduate programs stems from a fruitful integration of teaching and research. Unlike many other research universities, Clark has resisted the polarization of faculty into groups dedicated either to research or teaching. Instead, the University has sought out and supported faculty members who have the interest and the energy to excel in both areas, and who appreciate the interplay between their own research and their work with students. Here, the same professors who teach introductory and advanced classes, supervise special projects, and advise students about their academic life also continue to build Clark's international reputation as an outstanding research university. By taking special care to cultivate a "university-college" environment, Clark has attracted a faculty that is committed to excellence in teaching and original scholarship. These professors engage their students by sharing the excitement that sparks their scholarship. Beyond that, they introduce students to the rigor and tenacity that a researcher needs in order to follow through on that initial spark or new idea.

The spirit of inquiry that implies taking risks and being a step ahead of the times has always characterized Clark's faculty and students. Perhaps that explains the University's remarkable, century-long record of social and scientific firsts. Founded in 1887, Clark is the oldest graduate institution in New England and the second oldest in the nation. The undergraduate college, which opened in 1902, has been heavily influenced from the start by the academic values and quality of the graduate school.

Clark was established chiefly through the efforts of two individuals: founder Jonas Gilman Clark, the enterprising Worcester-area native and merchant for whom the University is named, and G. Stanley Hall, the prominent psychologist who served as Clark's first president and helped build the University's faculty and reputation. Over the course of its first century, Clark University brought Sigmund Freud to America, supported research that led to development of "the Pill," defined and measured the windchill factor, and served as the academic home of Robert H. Goddard, "Father of the Space Age," and of Albert A. Michelson, the first American to win a Nobel Prize in science.

In the last decade, Clark researchers have conducted internationally recognized research on brain tissue regeneration, developed a nuclear accident emergency plan for the Three Mile Island region, and led environmental training and development programs in the Third World, including more than ten African nations. Researchers in Clark's Graduate School of Geography recently edited and published a volume that is the first in over thirty years to assess and interpret changes in the earth's biosphere, examining the effect of 300 years of human activity on the earth, water, and air that sustain human life. A Clark physicist was among the first to measure the effect of fallout from the Chernobyl disaster on Europe. A Clark professor, an expert on sociocultural influences on human development, has initiated joint research projects to look at the development of values and ways of thinking in the different cultures of the United States and the former Soviet Union. A humanities professor recently published the first English language book on the renowned Spanish film director, Carlos Saura, and a philosophy professor is writing a book on the constitutional right to privacy. Besides maintaining an impressive record of research, the University also has extended its influence through professional journals and societies, including the journal *Economic Geography* and the American Psychological Association, both of which were founded at Clark. The University has played an especially prominent role in the development of psychology and geography as distinguished disciplines in the United States.

Clark University's Mission

Clark University's mission is to educate undergraduate and graduate students to be imaginative and contributing citizens of the world, and to advance the frontiers of knowledge and understanding through rigorous scholarship and creative effort.

The University seeks to prepare students to meet the challenges of a complex and rapidly changing society. In students as well as faculty, Clark fosters a commitment to excellence in studying traditional academic disciplines as well as innovation in exploring questions that cross disciplinary boundaries. The free pursuit of inquiry and the free exchange of ideas are central to that commitment.

The focus of Clark's academic program is a liberal arts education enriched by interactions among undergraduate students, graduate students, and faculty, and closely linked to a select number of professional programs. Clark also serves students who wish to continue formal education throughout their lives.

The intellectual and personal growth of students is enhanced by a wide variety of educational programs and extracurricular activities. Clark believes that intellectual growth must be accompanied by the development of values, the cultivation of responsible independence, and the appreciation of a range of perspectives.

Clark's academic community has long been distinguished by the pursuit of scientific inquiry and humanistic studies, enlivened by a concern for significant social issues. Among many other scholarly endeavors, Clark contributes to understanding human development, assessing relationships between people and the environment, and managing risk in a technological society.

Clark is dedicated to being a dynamic community of learners able to thrive in today's increasingly interrelated societies. The University maintains a national and international character, attracting high caliber students and faculty from all quarters of the globe. As a university residing in an urban context, Clark also strives to address the needs and opportunities of contemporary urban life.

Clark's intimate academic setting and tradition of "elbow teaching" provide many opportunities for students to pursue knowledge through active participation. High expectations, as well as easy access to the scholar-teacher faculty, encourage students to become autonomous learners. Clark's international and interdisciplinary orientation is combined with a tradition of strong self-direction among students and faculty. These attributes enhance the University's ability to contribute to the development of new modes of thought and to the advancement of society through the creation and transmission of knowledge.

The Undergraduate College

Interaction–among fields of study, between faculty and students, and between graduate and undergraduate programs–is a virtue of Clark's university-college environment. The University hallmark is people and programs that cross academic and cultural boundaries and that blend and integrate the arts, humanities, sciences, and social sciences. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the college and its students.

The Clark undergraduate program encourages thoughtful exploration of the interconnected nature of knowledge. A Clark education has three elements: first, it assists students in developing intellectual skills that prepare them for a productive and active life; second, it develops the broad appreciation of the heritages of world cultures necessary to be a liberally educated person; and third, it gives students extensive involvement with a specific field of study so that each student can experience intellectual mastery and critical thinking in a particular area.

The university-college concept integrates graduate and undergraduate education, developing in students intellectual competence, personal maturity, and skills in analysis, communication, and critical thinking. Throughout their undergraduate years, students assume increasing responsibility for their own learning, which often culminates in research projects with senior faculty.

Academic Programs

PROGRAM OF LIBERAL STUDIES

The foundation of a Clark undergraduate education is the Program of Liberal Studies. Through the program, students acquire skills in critical thinking and knowing that are essential for self-directed learning. They are given a framework within which they can select an organized pattern of study and receive a broad introduction to liberal and lifelong learning. The Program of Liberal Studies has two components:

1. *Critical Thinking*: Every course in the University involves work in critical thinking. However, two types of courses place special emphasis on the cultivation of skills in this area. Each student is required to complete two courses, one from each of these areas:
    - A. *Verbal Expression*: Courses, offered in many different disciplines, that place special emphasis on the relationship between writing and critical thinking within that discipline.
    - B. *Formal Analysis*: Courses, offered in several departments, that place special emphasis on logical and algebraic modes of thinking.
2. *Perspectives*: Perspectives courses encourage breadth and introduce students to the different ways in which various disciplines or fields define thinking, learning, and knowing. Students must successfully complete courses in each of the six categories, each course from a different academic department.
    - A. *Aesthetic: Aesthetic perspective* courses give primary emphasis to artistic

expressions of the imagination and to the perception, analysis, and evaluation of aesthetic form. These courses are designed to enhance the appreciation and understanding of the arts.

B. *Comparative: Comparative perspective* courses introduce students to the methodology and modes of comparative analysis by highlighting human diversity with respect to politics, economics, religion, culture, class, race, gender, or ethnicity. They provide students with tools for analyzing human experience through the examination of similarity and uniqueness within and across societies.

C. *Historical: Historical perspective* courses develop the student's capacity to understand the contemporary world in the larger framework of tradition and history. Courses focus on the problems of interpreting the past and can also deal with the relationship between past and present. All courses are broad in scope and introduce students to the ways scholars think critically about the past, present, and future.

D. *Language/Culture: Language perspective* courses foster the study of language as an expression of culture. A student may study a foreign language, which by its nature involves becoming oriented towards the relationship between language and culture, or an English-language course that deals with the same issue.

E. *Natural Scientific: Scientific perspective* courses teach the principal methods and results of the systematic study of the natural world. Courses focus on the knowledge and theoretical bases of science, as well as on the observational and experimental methods of scientific study. Courses involve a laboratory or similar component to introduce the student to the observation of natural phenomena and the nature of scientific study.

F. *Values: Values perspective* courses try to make sense of the moral dimension of human life, as this dimension is reflected in personal behavior, social policy, and institutional structure. Courses taught from the Values Perspective focus on the systematic analysis of ethical issues and engage students in the formulation and *reasoned* evaluation of moral and ethical claims.

Each perspective is important in the development of a balanced education. A list of the courses in each perspective is available each semester during registration.

THE MAJOR

Sometime during their first two years, students discover one area that is especially intriguing. At that point, a student is ready to complement the pleasure of free-ranging exploration with a more in-depth study of the subject that has caught his or her interest. By declaring a major, the student defines the area in which she or he is prepared to develop a more sophisticated mastery. Students may choose a traditional or interdisciplinary major, or may design a major tailored to their particular academic interests.

The undergraduate major is a program of study anchored in a particular discipline but specifically structured to include courses in related disciplines. This concept recognizes that breadth of knowledge must be maintained and achieved concurrently with specialization. Particular attention is placed on the interrelation of the major programs within the University and early research opportunities.

A major consists of 12 to 19 courses designated by a department. No department may require a student to take more than 19 courses in a major, but a student may take more than 19 courses if he or she meets the other University requirements for graduation. Majors must be declared prior to the beginning of the junior year.

Majors are offered in

- ancient civilization
- art (art history, studio art)
- biochemistry and molecular biology
- biology
- business management
- chemistry
- comparative literature
- computer science
- economics
- English
- environment, technology, and society
- French
- geography
- German
- government and international relations
- history
- international development and social change
- mathematics
- music
- philosophy
- political science (see government and international relations)
- physics
- psychology
- screen studies
- student-designed
- sociology
- Spanish
- theater arts

INTERDISCIPLINARY DEPARTMENTAL MAJORS

One of the strengths of Clark's university-college experience is the willingness of faculty and students to cross the traditional boundaries between academic fields in fresh ways. Clark's interdisciplinary majors, and special programs and concentrations, help students to see beyond the barriers of academic specialization. The course listings under each of these programs and areas of study offer more complete information.

Ancient Civilization

The ancient civilization major includes courses covering the entire spectrum of ancient Mediterranean culture including Greek, Hebrew, and Latin languages. Throughout the program, emphasis is placed on developing a sound interdisciplinary knowledge of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization. For more information, refer to the departmental listing.

Biochemistry and Molecular Biology

The Biochemistry and Molecular Biology Program began some ten years ago in response to the extraordinary advances being made in this area of science. We now understand the molecular mechanisms of life to a degree that was formerly unimaginable; the development of techniques for gene cloning and DNA sequencing, especially, has revolutionized the biological sciences. To provide an opportunity for undergraduates to participate in these exciting new discoveries, this interdisciplinary undergraduate major was developed by biochemists in the Biology and Chemistry Departments. It allows students to obtain a solid background in fundamental biology, chemistry, physics, and mathematics, and then to study contemporary biochemistry and more advanced topics such as recombinant DNA, protein chemistry, molecular genetics, and neurochemistry. Undergraduates can also participate in research with program faculty members. For more information about courses and requirements, refer to the departmental listings.

Comparative Literature

This major allows the student of literature to transcend the boundaries of any one national literature, period, or genre. Comparative literature students are encouraged to combine such areas as philosophy, visual and performing arts, psychology, and history with their specific interests in language and literature. For more information, refer to the departmental listing.

Environment, Technology, and Society

Clark was one of the first universities in the country to offer an undergraduate major in the interdisciplinary field of environment, technology, and society. The Environment, Technology, and Society (E.T.S.) Program is designed for students who hope to contribute to the solution of complex societal problems such as environmental protection, energy policy, technological hazards, and risk analysis. Degree requirements emphasize a firm grounding in natural science coupled with considerable exposure to social science and public policy perspectives, both derived from coursework in traditional departments.

The E.T.S. Program offers some thirty problem-oriented and methodological courses and a variety of special projects and internship experiences, often in conjunction with ongoing faculty research. E.T.S. courses and projects serve not only E.T.S. majors but also other students interested in taking E.T.S. courses as electives. The program also offers an M.A. degree and an integrated B.A./M.A. degree option in Risk Analysis and Technology Assessment. For more information on the E.T.S. major and related advanced degree programs, consult the departmental listing or E.T.S. faculty, or call the program assistant, Marcia Szugda. Students may also pursue environmental studies as a concentration while majoring in another field (see *Interdisciplinary Concentrations*).

International Development and Social Change

The International Development and Social Change Program focuses on questions of equity, growth, and development at a time when developing countries are increasing their influence on the world's economic, political, and social systems. I.D. recognizes that most issues and problems transcend national boundaries, and the program emphasizes the ways in which individuals can identify effective local action in the context of global change. The program serves students from developing nations as well as industrialized countries. It provides a forum for diverse perspectives and offers both a B.A. major in international development and an M.A. degree. Its hallmark is a unique combination of academic training and field research. Not only do students become aware of broad issues in international development, but they also acquire basic skills of resource management and social and economic analysis. Topics of particular interest include participation in local institutions, the roles of women, community organizations, rural development, and geographic information systems. Many students prepare for careers as planners, managers, and educators in public agencies and in private, nongovernmental organizations that promote development domestically and in Asia, Africa, or Latin America. Others choose further study in graduate and professional schools. For more information, refer to the departmental listing.

STUDENT-DESIGNED MAJORS

Because Clark students are encouraged to take the initiative in defining their academic objectives, their declared major need not be confined to traditional departmental majors or to the University's existing interdisciplinary programs. Many students take advantage of the opportunity to design their own majors–combining the perspectives of several fields to focus on a particular topic. Student-designed majors, established with the guidance of faculty advisors, are approved by the beginning of the second semester, junior year. Student-designed majors are coordinated and approved by the dean of the college.

INTERDISCIPLINARY CONCENTRATIONS AND DEPARTMENTAL MINORS

For students with a strong interest in gaining depth in an area of study outside of their majors, the undergraduate college offers the option of pursuing an interdisciplinary concentration or a departmental minor.

Concentrations are offered in: Asian Studies, communication studies, environmental studies, ethics and public policy, international relations, Jewish studies, neuroscience, peace studies, and women's studies. Minors are offered in: art history, chemistry, computer science, economics, education, English, government, history, management, mathematics, music, physics, and screen studies. For details, consult the department chair or program director.

ACCELERATED PROGRAMS

To help bridge undergraduate and graduate education, Clark has established several integrated programs that allow students to complete requirements for bachelor's and master's degrees at an accelerated pace. Because undergraduates are granted admission to these special programs before receiving their undergraduate degree, they can begin to fulfill advanced degree requirements during their junior and senior years.

Each bachelor's/master's degree program is career-oriented and spans several disciplines. Each provides participants with the knowledge and skills needed for entry-level professional positions and normally covers a three-year span, beginning in the junior year and leading directly to a master's degree. The bachelor's degree is awarded en route to the master's. The programs provide students with the knowledge and skills to enter a profession directly or to continue in a Ph.D. program. *Formal application for admission to these programs is required during the sophomore year*. Transfer students applying for these programs should direct their inquiries to the Admissions Office.

The University has approved accelerated B.A./M.A. programs in Environment, Technology, and Society and in International Development and Social Change. Students interested in a business career may consider the five-year B.A./M.B.A.

Business/Management

Two options are available to undergraduates interested in a business/management program at Clark's nationally recognized School of Management, which is accredited by the American Assembly of Collegiate Schools of Business (A.A.C.S.B.).

1. *The Management Major*: Students interested in a management career in a profit or nonprofit organization (business, government, education, healthcare delivery systems, religious institutions, etc.) and who wish to explore job opportunities after graduation, should consider majoring in business/management. The program draws upon the broad liberal arts distribution requirements, integrat-

ing them into a program that is practical as well as broadly educational. For more information, refer to the management listing.

2. *The Five-year B.A./M.B.A. Program*: Strongly recommended for students who plan to pursue a master's degree in business administration after their undergraduate work, this program offers an opportunity for accelerated graduate study. During their senior year, a select group of students, who meet the program requirements, finish their major requirements and are also permitted to enroll in graduate management courses, thereby enabling them to complete the M.B.A. in one year beyond the undergraduate degree, rather than the usual two years. Five-year B.A./M.B.A. students are encouraged to do their B.A. work in a field other than management/business (e.g., art, economics, foreign languages, psychology, government, etc.) and take related courses or electives to prepare them for graduate work in the senior year. They receive their B.A. after the senior year and the M.B.A. after the fifth year. For more information, refer to the management listing.

In addition to these programs, the Graduate School of Management offers a Master of Business Administration Program and a Master of Health Administration Program, which is offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School and is accredited by the Accrediting Commission on Education for Health Services Administration (A.C.E.H.S.A.). Students may enroll in either program on a part- or full-time basis. For more information, refer to the management listing.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special project courses, which may be taken with the permission of the instructor concerned. Directed Readings courses consist of a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special Projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but may not exceed a full course except by petition to the College Board. Students may take up to two full course credits in Directed Readings, Special Projects, or some combination of the two in a given one-semester period. There is no limit on the total number of such courses that may be counted toward the B.A. degree.

Special Opportunities for Study

THE EXTENDED UNIVERSITY: FROM GLOBAL TO LOCAL

STUDY ABROAD PROGRAMS

Clark University is well known for its international character and is committed to encouraging a strong Clark presence abroad and an international presence on campus. The Study Abroad Program Office coordinates international study programs.

Clark-sponsored international study programs in Great Britain, France, Germany, Israel, Spain, Japan, Australia, the Caribbean, Costa Rica, Kenya, and Mexico are available on a competitive basis to qualified undergraduate students:

Great Britain
London School of Economics
University of East Anglia

France
University of Bourgogne, Dijon

Great Britain (continued)
University of Sussex
University of Stirling, Scotland
London Internship Program

Germany
University of Trier

Israel
Rehovot Field Study/Internship Program

Mexico
The School for Field Studies
Center for Marine Mammal Studies

Kenya
The School for Field Studies
Center for Wildlife Management Studies

Spain
Tandem School, Madrid
University of Seville

Japan
Kansai Gaidai, Hirahaka

Costa Rica
The School for Field Studies
Center for Sustainable Development Studies

Caribbean
The School for Field Studies
Center for Marine Resource Studies

Australia
The School for Field Studies
Center for Rainforest Studies

Students who study abroad on a Clark program pay regular tuition, room and board to Clark. Clark assumes responsibility for the students' academic programs and normal living expenses for the academic year. Students may earn up to a full year of credit through study abroad. Students interested in study abroad should drop by the Study Abroad Office to pick up a copy of *Study Abroad Guidelines* or talk to a member of the office.

For further information, contact the Study Abroad Office, (508) 793-7363.

OFFICE OF INTERNATIONAL STUDENTS AND SCHOLARS

The Office of International Students and Scholars (OISS) provides international students with information on subjects ranging from U.S. immigration regulations to practical and personal questions related to daily life in the U.S. and at Clark. One of the main objectives of the OISS is to assist with the cultural and academic adjustment of international students so they may better meet their educational objectives. The OISS also works towards promoting cultural awareness within the Clark community as a whole.

CLARK EUROPEAN CENTER IN LUXEMBOURG (CECIL)

The Clark European Center offers students and faculty additional opportunities for study and research abroad. A special feature of CECIL is the May Term, which follows the spring semester. Clark faculty take groups of students to Luxembourg on a four-week academic program especially suited for Luxembourg and its environment. Students earn one unit of credit for participating in any one of three or four courses that vary from year to year. Titles of recent May Term courses include: *Romans and Barbarians, Field Biology of Western Europe, Economic Prosperity and Environmental Quality in Europe*, and *Transitions on the Rhine: Armageddon to Amity*. As part of the May Term experience, students broaden classroom learning by field trips to sites of particular interest in Luxembourg and the surrounding countries.

HENRY R. LUCE PROFESSOR OF CULTURAL IDENTITY AND GLOBAL PROCESSES

In awarding a professorship to Clark University, the Henry R. Luce Foundation made possible an important opportunity for students and faculty to address issues related to the relationships between specific cultural and national identities in an increasingly global world. As Luce Professor at Clark and a specialist in the study of migration and social change, Dr. Parminder Bhachu offers courses exploring ways in which cultural identity is transformed in times of rapid social and technological change. A complete description of courses is listed under Cultural Identity and Global Processes in the Departments and Courses sections.

FIRST-YEAR SEMINARS

First-year Seminars are offered by nearly all departments. The seminars are designed to allow students with particular interests and strong backgrounds to explore issues and subjects in depth in their first semester. Seminars are limited to no more than fifteen students, and the faculty members serve as the advisors for the students in their seminars. Some examples of recent First-year Seminars include: *The Pursuit of Inquiry; Cellular Regulation; The Nature and Basis of Individual Moral Development; Framework for History; Introduction to Archaeology; Fact, Fiction and Film; Preserving Genomes; Through Another's Eyes: Travel Writings and Cultural (Mis)Understanding; Hesse, Kafka, Mann; Great Books of China; Epidemic: AIDS in America; Language, Psychology, and the Self.*

WORCESTER CONSORTIUM FOR HIGHER EDUCATION

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each semester at Anna Maria College, Assumption College, the College of the Holy Cross, Worcester Polytechnic Institute, Worcester State College, University of Massachusetts Medical School, Tufts University Veterinary School, Becker Junior College, or Quinsigamond Community College.

More than 15,000 students have cross-registered under the consortium arrangement since 1968. The "extended university" affords Clark students easy access to increased programs and course options at no extra charge.

Students from Holy Cross, Worcester Polytechnic Institute, and Clark University have worked together on a water pollution project; consortium students have been involved in a lead paint testing program; engineering students from Worcester Polytechnic Institute, University of Massachusetts Medical School, and Quinsigamond Community College have worked with Clark students as a research unit for the Worcester Department of Public Health to conduct an infectious disease study. A health studies option, which arranges student internships in health care organizations and internships with research scientists in laboratory settings, is available through the "extended university" as defined by the Worcester Consortium. A music option also is available to stimulate intercollegiate participation in performing groups, to encourage cross-registration in music courses, and to make available concentrated study for students with extensive music backgrounds.

Courses taken at consortium institutions should not duplicate those taught at Clark. Approval of the department chair or, when necessary, the dean of the college is required. Students enrolled in the undergraduate college may not enroll independently at other consortium institutions and receive Clark credit. To help students select cross-registration courses, the Consortium Office compiles a master course list by subject. This list is available in the Academic Advising Center prior to registration.

CONSORTIUM GERONTOLOGY STUDIES PROGRAM

The Worcester Gerontology Studies Program is offered through the Worcester Consortium for Higher Education. This program provides courses and internships in a coordinated curriculum leading to a Certificate in Gerontology. Career planning for participating students is organized through the Consortium Office in coordination with on-campus career services.

A variety of courses related to aging is available among consortium colleges and exemplifies the multidisciplinary nature of gerontology as a field of study. Contacts with a variety of agencies in the community have been developed in order to place and supervise students in internships with the elderly. To enhance support and supervision of the internship experience, the program organizes internship seminars and workshops. These address common issues and concerns of student interns and enable students to learn from their peers.

Placements for internships are in a variety of settings: nursing homes, day care centers, family service associations, home care corporations, neighborhood centers, councils on aging, retirement programs, health services, and hospitals. Roles can be as varied as counseling, visiting, occupational and physical therapy, legislative assistance, advocacy, administration, and others.

For further information about the Gerontology Studies Program, contact the coordinator, Susan Perschbacher Melia, Department of Sociology, Assumption College, 500 Salisbury Street, Worcester, Massachusetts 01615, (508)752-5615. Professor David Stevens, Department of Psychology, and Professor Deborah Merrill, Department of Sociology, are the program representatives at Clark.

ACADEMIC ADVISING

The Academic Advising Center provides students with assistance in planning their academic programs through a coordinated set of activities and services. At the center, all new students are assigned an academic advisor who helps guide their choices of courses and programs. Once a student has selected a major, academic advising is coordinated within the student's major department.

Among the academic support services are:

- *Writing/The Writing Center:* Recognizing the importance of writing in all fields, Clark offers cross-disciplinary, departmental, and special Writing Center programs. The Verbal Expression requirement can be met by courses in many disciplines. In many courses, class work is supplemented by peer writing groups. For some students the Verbal Expression course is preceded by *Expository Writing*. Advanced courses in writing are offered in departments such as English and History. Supplementing the curriculum, Clark's Writing Center provides individual tutoring and noncredit workshops for all interested students. Writing Center offerings are flexibly designed to help students at all levels achieve clear, correct, graceful writing.

- *The Special Needs Program:* This program is designed to ease the transition to functional independence for students with special learning needs. Students with documented disabilities may enroll in this program. The director and staff provide specialized advising, offer study skills assistance, and facilitate the negotiation of reasonable accommodations. Testing and evaluation of learning disabilities are available at a reduced fee for Clark students. A summer transition program and an early orientation for eligible first-year students are also part of this program.

- *The Peer Tutoring Program*: This service provides individualized subject tutoring across a wide range of courses and disciplines. Trained peer tutors offer this service at no cost or for a minimal fee.

- *Learning Skills Program*: Through group workshops and individual appointments, students may participate in time management, test taking, note taking, and test preparation programs to improve their study skills.

OTHER ACADEMIC SUPPORT SERVICES

- *Language Arts Resource Center*: This center provides video and audio tapes as well as access to live and taped satellite broadcasts of international news and programs to assist students learning a foreign language. The center is located on the fourth floor of Goddard Library.

- *Goddard Library Public Services–Reference Desk*: Students working on research projects may receive instruction and assistance at the reference desk on the use of the extensive research resources of Clark University libraries as well as the consortium library system.

- *Office of Information Systems (OIS)*: The Computing Center in Carlson Hall offers tutors by appointment to assist students in mastering Clark's computer network programming and word processing resources.

THE AMERICAN LANGUAGE AND CULTURE INSTITUTE (ALCI)

ALCI serves as a resource for international students pursuing study at the undergraduate and graduate levels. ALCI offers a series of credit and not-for-credit seminars and courses enhancing students' knowledge of and facility in the language, as well as the academic and cultural milieu of the United States.

For further information, contact the ALCI Office in Jonas Clark Hall, Room 108.

PREPROFESSIONAL PROGRAMS

Clark University recognizes professional preparation as fully compatible with a liberal arts education. In that spirit Clark offers preparation for careers in management, computer science, education, engineering, law, medicine, and other health sciences.

Prelaw

Students interested in law school are advised to plan a broadly based academic program that is liberal in character and that draws from the natural and physical sciences, social sciences, and the arts and humanities. Although there is no specific undergraduate major or constellation of courses recommended by law schools, it is important that the courses selected lead toward the development of certain skills: (1) Communication and articulation skills: courses in composition, creative writing, and speech as well as courses in history, philosophy, government, theater, and other fields in which the ability to read, write, and speak well is stressed; (2) Quantitative analysis: courses in mathematics, computer science, economics, and geography, which help develop the ability to compile, understand, interpret, and analyze data; (3) Logic: the study of law requires the systematic analysis of propositions and of the conclusions that can be drawn from them; all courses that provide training in this skill are highly desirable; (4) Critical understanding: courses in ethics, history, philosophy, sociology, and other humanities and social sciences that promote understanding of human institutions and values.

In general, the records of students applying to law schools will be evaluated by law schools according to several criteria: (1) the overall quality of grades, (2) the breadth and distribution of courses, and (3) evidence of advanced learning and scholarship.

Students who are interested in prelaw are urged to consult the prelaw advisor, Professor Mark Miller, Jeff 311, or the Office of Career Services.

Premedical/Predental

Students interested in premedical or predental programs may major in any of the sciences, social sciences, or humanities but must complete, normally before the end of the junior year, the minimum requirements for admission to medical and dental schools: one year each of introductory chemistry, biology, physics, and organic chemistry (all with laboratories), and one year of English. A year of calculus and a semester of psychology also are strongly recommended or required by many medical and dental schools. Although there is considerable variation, some medical or dental schools encourage students to take additional courses in biology, chemistry, and biochemistry. Proficiency in quantitative reasoning, communication skills, and reading comprehension must be developed, and a broad liberal arts background is helpful toward that end. In selecting their courses and planning their programs, students are urged to consult members of the Premedical and Predental Advisory Committee. Materials pertaining to premedical, predental, and other health profession programs are available in Sackler Sciences Center, Room J307, and at Career Services.

3/2 ENGINEERING PROGRAM WITH COLUMBIA UNIVERSITY

The 3/2 engineering program is an undergraduate program involving three years at Clark University followed by two years at the Columbia University School of Engineering and Applied Science. The program leads to a four-year liberal arts degree from Clark and, after the fifth year, an engineering degree from Columbia University.

At Clark, students major in one of the liberal arts subjects whose requirements strongly overlap the junior-year entrance requirements for engineering at Columbia.

The program is open to all Clark students. Although formal application into the 3/2 program is not made until the third year at Clark, students must register with the 3/2 Engineering Committee at the beginning of their first year to insure that they follow the appropriate curriculum.

Admission to Columbia depends on the student's performance during the first three years at Clark. Only students having appropriate records will be recommended for admission to Columbia by the 3/2 Engineering Committee. For a complete description of the program, see Engineering under the Departments and Courses section.

NONTRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (e.g. internship experiences, off-campus research, study at nonaccredited institutions) are sometimes eligible for course credit. To qualify, an experience must involve a significant extension, embodiment, or illustration of previous or concurrent systematic academic work. It must take place under competent supervision, and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student prior to the beginning of the experience. Course credit will not be given for work that duplicates previous coursework or other prior educational experiences.

INTERNSHIPS

The Clark University Internship Program offers qualified students the opportunity to spend a semester working off campus, full- or part-time, as an extension of the academic curriculum. Having undertaken sufficient coursework in a related discipline, the student may choose a position from a large number of agencies offering internship placements. These positions allow him/her to perform extended work in that discipline while testing areas of potential career interest. Academic credit is offered for internships that take place under the supervision of qualified agency sponsors and in conjunction with appropriate Clark faculty members. Internships are equivalent to undergraduate courses, and tuition is assessed on a per-credit basis. All internships must be approved by the Internship Program. Internships are generally graded on a pass/no record basis.

WASHINGTON STUDIES PROGRAM

Clark participates in the Washington Semester Program of the American University in Washington, D.C. and the Washington Center for Internships and Academic Seminars.

Under these programs, students spend a semester studying and/or working in the nation's capital. Although any student may participate in these programs, the opportunity is particularly attractive to students majoring in government and international relations, history, economics, and sociology. Inquiry and application should be made to the chair of the Department of Government and International Relations for the Washington Semester Program or to the director of the Internship Program, Career Services Office, for the Washington Center Program.

RESERVE OFFICERS' TRAINING CORPS (ROTC)

Clark University students may voluntarily participate in and receive benefits from the two- or four-year Army ROTC programs conducted at Worcester Polytechnic Institute.

American citizens who are physically qualified, receive their degree from Clark University, and satisfactorily complete the two- or four-year Army ROTC program, may be commissioned as second lieutenants in the U.S. Army. Graduates may serve in the active Army, the Army Reserve, or the Army National Guard. Students may also request a delay in service obligation to attend graduate school.

Students may compete for the three-year Army ROTC scholarships. This competition is based upon the students' achievements, both scholastic and extracurricular, and not upon the financial status of their family.

For further information, interested students should contact the Army ROTC Department at Worcester Polytechnic Institute. The office is located in Room 28 of Harrington Auditorium. The phone number is (508) 752-7209.

Academic Facilities and Resources

LIBRARIES

The Robert Hutchings Goddard Library is the academic heart of the University and an architectural landmark. The library contains more than 500,000 volumes (including microform volumes), a collection of 240,000 monograph titles, and subscriptions to 2,200 periodicals. As a member of Worcester's educational consortium, Clark also offers students the use of eight consortium college libraries and a combined collection of more than 2 million volumes.

Goddard Library offers an exciting mix of educational resources, including a viewing area for videocassettes; a listening area for compact disks, records, and tapes; a language lab; microcomputers; and terminals linked to the campus computing network. Through the online catalog, students and faculty have access to the collections of 43 member libraries with holdings totaling 4.5 million volumes. A number of CD ROM databases are available for searching citations to periodical literature and business records.

The library is open 96 hours per week, with a normal weekday schedule of 8 a.m. to midnight. The schedule is extended at exam times to provide even longer study hours.

The Guy Burnham Map and Aerial Photography Library. Founded in 1921, this library is an active cartographic information center. The collection, global in scope, contains 180,500 maps and 7,300 aerial photographs, as well as atlases, journals, globes, map reference materials, and tourist information. A depository agreement with the U.S. Government Printing Office insures the availability of a full array of U.S. government maps. The library is located on the lower level of the Geography Building.

The Science Library, a branch of Goddard Library, serves the Clark community in the disciplines of biology, chemistry, and physics. Located on the top floor of the Sackler Sciences Center, it houses selected science journals from 1960 on and a research collection of recent monographs. An automated circulation system also gives access to holdings in Goddard Library and 42 other consortium libraries. A seminar room and microcomputers are available for faculty and student use. The library is open 83 hours each week, with a weekday schedule from 8 a.m. to 10 p.m. The hours are extended until midnight during exams.

MEDIA SERVICES

The Media Services Office is located in Jonas Clark Hall. The office provides audio-visual support for classroom presentations and campus-wide events. Media Services provides consultation and assistance on production of teaching materials and the documentation of campus events and classroom activities. The various types of equipment available to faculty, staff, and students include videocassette recorders, video camcorders, cassette tape recorders, 16mm projectors, slide projectors, overhead projectors, and computer projection equipment.

Media Services also offers a FAX service to members of the Clark community, with transmission during regular business hours and receiving 24 hours a day.

OFFICE OF INFORMATION SYSTEMS

The University Computing Center houses Clark's cluster of VAX Digital Equipment Corporation (DEC) computers including a VAX 6310, a VAX 8530, and two multiuser Unix DEC station computers used for teaching, individual instruction, and research. Available through public access sites in Carlson Hall and the Goddard Library are numerous network terminals, personal computers, and printers for student use. Open seven days a week, the centers also offer the use of a variety of graphics terminals, microcomputers, and software to meet the diverse needs of students enrolled in the humanities, social sciences, and sciences. Specialized equipment is also available in various departments in support of unique applications such as the cartography laboratory in Geography and the personal computer laboratory in the Graduate School of Management. Clark also offers a personal computer facility in Jonas Clark Hall and Carlson Hall that houses Macintosh and IBM microcomputers. These facilities and the Carlson Hall facility serve as group classroom space for scheduling of "hands on" courses using both microcomputers and network terminals. The University also supports network connections to the international Internet and Bitnet education and research networks.

SCIENCE FACILITIES

The $8-million Arthur M. Sackler Sciences Center opened in the fall of 1984. The brick and glass complex links the Biology, Chemistry, and Physics Departments and houses facilities for both teaching and research. Interdisciplinary programs, such as Biochemistry and Molecular Biology; Neuroscience; and Environment, Technology, and Society, also are housed in Sackler. State-of-the-art scientific equipment, such as an electron microscope and high-field nuclear magnetic resonance (NMR) spectrometers, serve Clark students and researchers, as well as others in the central Massachusetts region. A centralized science library and microcomputer rooms also are housed here.

VISUAL AND PERFORMING ARTS FACILITIES

The George F. and Sybil H. Fuller Foundation Center for Music, dedicated in March 1985, is a state-of-the-art facility for teaching, performing, rehearsing, and experimentally creating music. The center has two computer music studios containing powerful direct digital systems for composition, sound processing, and synthesis based in individual, personal computer work stations.

– Studio space for drawing, painting, graphic design, visual studies, and photography as well as darkrooms, a sculpture and theater set construction studio, printmaking facilities, and costume design shop.

– A University Gallery, directed by student interns, provides learning experiences in arts management and exhibition design.

RESEARCH CENTERS AND INSTITUTES

The George Perkins Marsh Institute, established in 1991, is a Clark-based program specifically dedicated to the interdisciplinary study of the relationship between nature and society, emphasizing the human dimensions of global environmental change. The institute draws on the University's 70-year tradition of excellence in teaching and research on these themes, represented during the last five years by The Earth Transformed Program and CENTED (see below), which established Clark University as an international leader in this field of study. The institute includes more than 50 researchers and students from the social sciences, sciences, and humanities. The institute's director is Dr. B.L. Turner II.

The institute houses four centers and a research library (see Marsh Library).

The Center for Technology, Environment, and Development (CENTED) conducts basic and applied research related to major societal and global problems focused on natural and technological hazards, environmental degradation, and energy policy. Established in 1978, CENTED maintains close links with other international research centers, governmental agencies, and private voluntary organizations.

The Center for Land, Water, and Society (CLWS) examines the interactions of land and water resource use systems with social and ecological change. Research within the center emphasizes the resource use system as a whole (e.g., a farming system or a hydraulic system), the mediating roles of social institutions and organizations, and long-term assessments.

The Center for Global Urban Studies (CGUS) recognizes the central role of industrial and urban systems in defining the human impact upon the global environment. As the newest center, it is developing research around such themes as the role of environmental regulation in the location of industry and of institutional structures in mediating environmental impacts..

The Clark Labs for Cartographic Technology and Geographic Analysis (Clark Labs) is an international leader in the development and use of computer software and datasets for monitoring and modelling global environmental change. Clark Labs develops and distributes IDRISI, a software package for geographic analysis used at more than 3,000 sites in nearly 80 countries.

The Marsh Library houses a specialized research collection that is coordinated with the University's central library. Open to the public at large, this collection of books, technical reports, government documents, and data boxes focuses on risks and hazards; technology, environment and development; energy; water resources; and global environmental change, as well as subscriptions to some 500 journals and newsletters. The library has recently expanded its holdings in the fields of global environmental change, land-use policy, resource management, and urbanization. An on-line database provides access to an extensive collection on radioactive waste management, nearly 1,200 congressional hearings and reports, an extensive vertical file of articles on international development, and a collection of media responses to the Chernobyl nuclear accident. The Marsh Library is located at 18 Claremont Street.

The Hiatt Center for Urban Education was created in 1991 through a substantial endowment as a permanent partnership between Clark University and the Worcester Public Schools. The center brings together Clark researchers and public school teachers and administrators to find innovative ways to address the challenges and possibilities of contemporary urban schools, especially in light of the diverse cultural backgrounds of the students they serve. The center fosters the work of an interdisciplinary group of scholars and teachers, focusing on studies of language, culture, and learning. It supports teachers as researchers and educational leaders and has developed an innovative teacher education program and a close relationship with five demonstration schools in the city. The center seeks to set a new vision and standard for urban education nationwide. Dr. Sarah Michaels directs the center.

The Heinz Werner Institute for Developmental Analysis is devoted to the application of developmental analysis to all psychological and psychocultural phenomena. The institute is named for Heinz Werner (1890-1965), one of the leading psychologists of the past half century, and the first chairman of the Board of Directors of the Institute of Human Development, founded at Clark in 1957. The institute encourages interdisciplinary conferences and research cooperation among all groups whose primary interest is in the promotion of human development. Dr. Seymour Wapner is chair of the Institute's Executive Committee.

The Institute for Economic Studies, funded and supported by an annual grant by the John M. Olin Foundation, began its operation in January 1980. The institute is an integral part of the Economics Department, and its main objectives are to research significant economic issues, propose policy options to deal with them, and disseminate the results of the research–particularly its policy recommendations–to a broad audience. The institute provides a framework within which new curricula and teaching methods are developed. In addition, a Scholar-in-Residence Program was instituted in 1984 to stimulate the exchange of ideas and dialogue between guest scholars and members of the institute and economics faculty. The institute director is Professor Attiat F. Ott.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

At Clark we view education as developmental; it is much more than a simple accumulation of credits. As a result, students may not accelerate their progress toward graduation by more than one semester. All matriculated students must complete a minimum of seven full-time academic year semesters or their transfer equivalent for graduation.

Course and graduation requirements: Academic credit toward the bachelor of arts degree is expressed in terms of course units. Each course is equivalent to one unit (four credit hours). To earn a bachelor's degree, a student must complete satisfactorily a minimum of 32 course units (128 credit hours) with a minimum 2.0 grade point average. He/she must receive a C- or better in at least 24 of these courses. Successful bachelor of arts degree candidates must also satisfactorily complete all institutional, major departmental and *Program of Liberal Studies* requirements for graduation. Transfer credit for students with fewer than 32 courses in residence is established by the Transfer Evaluation Committee.

For the purpose of transfer, a full Clark course is equivalent to four semester hours of credit.

RESIDENTIAL CREDIT

To earn a bachelor's degree at Clark, a student must earn at least one half the total number of course units for the degree and at least one half the total number of course units taken for fulfillment of a major in a Clark program. External credit is credit earned in the following categories:

1. Advanced placement
2. Credits transferred from other American colleges and universities
3. Credit earned in foreign study programs administered by American or foreign institutions of higher learning other than Clark.

The amount of transfer credit that can be applied to a bachelor's degree at Clark is limited by category.

1. No more than one semester (4 units) may be granted in advanced placement (A.P.). A.P. credit is defined as one unit of degree credit assigned for a score of 4 or 5 on a CEEB A.P. examination taken prior to matriculation and before the student formally enrolls. Students also may receive credit for college work completed prior to their matriculation at Clark University if that credit was not needed to fulfill high school graduation requirements, is in a content area deemed academically acceptable to Clark, and is from an accredited college or university. Finally, students *may* apply for advanced placement credit based on coursework or exams taken in international programs (e.g. International Baccalaureate, A levels, etc.). Credit is assigned on a case-by-case basis.
2. Students transferring to Clark from another institution may transfer in *no more than 16 units* of course credit. Students who begin their coursework at Clark may subsequently transfer *up to 12 units* of course credit from other schools.
3. Normally, no more than one year (8 course units) may be taken in study abroad programs.

DECLARATION OF THE MAJOR

Students must declare their major no later than the end of the second semester, sophomore year. Changes in major after this point are possible but may prolong the undergraduate experience.

ACADEMIC REGULATIONS

Full-time study is defined as a three- or four-course program. Normally undergraduates carry four courses per semester. Full-time students must enroll in three or more courses per semester. Students should consult their faculty advisor, or, in some cases, the Academic Advising Center, or major departments when questions about course or program selection arise. With approval from the College Board, juniors with a minimum G.P.A. of 3.0 in their prior semester and seniors in good academic standing may enroll in a fifth course each semester at no additional cost.

While first-year students and sophomores may choose any course designated by a department as open to them, 200-level courses are normally designed for juniors and seniors. Juniors and seniors may elect any 100- or 200-level course, provided they have met all required prerequisites and have the permission of the faculty member, if necessary.

Undergraduates may be admitted to 300-level graduate courses with the approval of the instructor.

GRADES

Grades are an indication of individual performance in each course taken at the University. At Clark four grading patterns are currently in use:

1. *Graded courses*: This pattern uses the symbols A, B, C, D, and F with the modifying symbols "+" and "–" for A, B, and C. The lowest passing grade is D. The faculty has approved the following qualitative description of grades:
   A indicates work of distinction, of exceptionally high quality
   B indicates good work, but not of distinction
   C indicates average work and satisfaction of University degree requirements
   D indicates marginal work
   F indicates unacceptable work.
2. *The Failure Removed (FR) Grade*: Students enrolled in graded courses will receive an FR in place of their first two earned F grades. An FR will not appear on the student's transcript. After a student has received two FR grades, all subsequent F grades *will* appear on the transcript and become a part of the student's permanent file. An F grade also may be assigned by the College Board in cases of serious infractions of academic integrity. This F grade may not be removed.
3. *The Pass/No Record Option*: This option uses the symbols P, NR. P indicates work at a level of C- or better. Neither the P grade nor its credit is included in the calculation of the grade point average. Performance below a C- results in a No Record (NR) grade. NRs do not appear on students' transcripts. Students must choose this grade option at registration. There is no limit to the number of NR grades that a student may receive. However, NR grades do not carry credit and may not be counted toward graduation or University requirements.
4. *The Credit/No Credit Option*: This grading option, assigned by the University to a course, uses the symbols CR/NC. CR indicates work at a level of C- or better. The NC is treated like an F.

Grade point averages are calculated by the University to determine academic good standing, annual and January academic honors, Latin honors at graduation and eligibility for various honor societies. The grade point average is calculated as the average of grades earned in all Clark University graded courses. Neither external credit nor ungraded Clark University courses are included in this calculation.

ELECTION OF THE PASS/NO RECORD OPTION

The availability of the pass/no record option is designed to help minimize the competitive aspects of grading for those who find competition detrimental to learning. Some students elect a number of their courses on this basis.

All students should remember that the majority of graduate and professional schools have expressed a preference for graded transcripts and encourage applicants to have many graded courses. Preprofessional students and those for whom graduate school is a goal should exercise caution in selecting the pass/no record option. Students who are interested in attaining honors, such as Phi Beta Kappa, May, or January honors, and Latin honors at graduation, also should exercise the option cautiously.

NONCREDIT AUDIT STATUS

With the permission of the instructor, full-time degree students are eligible to register as auditors in any course. There is no additional charge for this privilege. Part-time matriculated students also may register as auditors with the permission of the instructor and the payment of a per course fee. In limited or sectioned courses, regularly enrolled Clark students are given preference for available openings.

Matriculated students who successfully complete audited courses (this determination is made by the instructor) also will have the audited courses posted on their permanent records.

Note: Records for nonmatriculating auditors are kept for only the semester in attendance. Transcripts are not issued for audited courses.

WITHDRAWAL FROM COURSES

A student may withdraw from a course at any time during the first two weeks of classes without having a W recorded on his/her transcript. Students may withdraw from a class up until the last day of classes, but any withdrawal after the second week of the semester will result in a W being recorded on the transcript. Students compelled to withdraw from a course due to exceptional circumstances (e.g. serious illness) may petition the College Board for the Withdrawal with Reason (WR) transcript notation for the course.

INCOMPLETES

A record of incomplete may be permitted by approval of the College Board or dean of the college only when sickness or some other unavoidable circumstance prevents completion of the course. *Individual instructors may not* assign incompletes without the approval of the College Board or dean of the college. A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester, it must be made up no later than the following October 1. *If a course is not completed within the specified time, the record of incomplete is changed to F.*

REGISTRATION

All continuing undergraduates are expected to register in November for the spring semester and again in April for the following fall semester. Details are provided in the registration class schedule each semester. Registrations must be finalized by the end of the second week of classes each semester. Notification of the dates for registration is given, and failure to register within the announced period results in a late fee.

EXAMINATIONS

Final examinations are given at the end of most courses. Approximately one week is set aside for each examination period, and an attempt is made to distribute examinations for individual students evenly throughout this period. Absence from a final examination, except for the most compelling reasons, may result in a failure for the course. Comprehensive final exams are not to be given (or to be due) during the last week of class nor during the scheduled reading period. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The University has no class attendance requirements; however, instructors have the prerogative of establishing such requirements for their own courses.

STUDENT ABSENCE DUE TO RELIGIOUS BELIEFS

According to Massachusetts state law, any student in an educational or vocational training institution, other than a religious or denominational educational or vocational training institution, who is unable, because of his or her religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day, shall be excused from any such examination or study or work requirement. He/she shall be provided with an opportunity to make up such examination, study, or work requirement that may have been missed due to such absence on any particular day, provided, however, that such makeup examination or work shall not create an unreasonable burden upon the school. No fees of any kind shall be charged by the institution for making available to the student such opportunity. No adverse or prejudicial effects shall result to any students because of their availing themselves of these provisions.

COURSE CHANGES

After registration is complete, a student may enter a course only with the permission of the instructor. Students may add courses up to two weeks after the beginning of classes. Thereafter, a student may enter a course only with the permission of the instructor and the College Board or the dean of the college.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of the academic year will be promoted if they have satisfactorily completed the following number of courses:

To the sophomore class	6 units
To the junior class	14 units
To the senior class	22 units

PARTIAL PROGRAMS

In special circumstances, students may be permitted by the dean of students or the dean of the college to register for a semester program of less than three courses. These students are designated as part-time students.

GUEST AND SPECIAL STUDENTS

Guest students from other colleges and universities who want to study at Clark for one or two semesters and special students who want to take only a few courses without enrolling as degree candidates may do so. Students who wish to enroll as guest students should contact the Admissions Office. Persons interested in special student status should contact the Office of Student Records.

ACADEMIC STANDING

Academic standing is reviewed each semester and is based upon performance during the previous semester. All students are required to pass at least two courses each semester. In order to remain in good academic standing, first-year students must complete at least five courses (with a minimum 1.7 grade point average) by the conclusion of their first year, sophomore students must complete at least six courses (with a minimum 2.0 grade point average) for the year. Juniors and seniors must also pass a minimum of six courses each year with a minimum 2.3 grade point average. In addition, students may earn no more than eight D grades for credit towards graduation. Students who fail to meet these requirements will be placed on academic probation for the next semester they are enrolled in the institution.

Students who do not maintain academic good standing or who violate academic integrity may be placed on academic probation or may be dismissed by the College Board or the dean of the college. The progress of students who are placed on academic probation is subject to continual review by the board.

Students on probation are expected to complete four courses with grade point averages as determined by their class standing (see above) or face a required withdrawal for the subsequent semester. A second required withdrawal requires the student to complete three courses at another institution with grades of C- or higher prior to their application for readmission to Clark. A third required withdrawal is final.

ACADEMIC INTEGRITY

Academic integrity is a basic value for all higher learning. Simply expressed, it requires that work presented must be wholly one's own and unique to that course. All direct quotations must be identified by source. Academic integrity can be violated in many ways: for example, by submitting someone else's paper as one's own, cheating on an exam, submitting one paper to more than one class, copying a computer program, altering data in an experiment, or quoting published material without proper citation of references or sources. Attempts to alter an official academic record will also be treated as violations of academic integrity.

To ensure academic integrity and safeguard students' rights, all suspected violations of academic integrity are reported to the College Board. Such reports must be carefully documented, and students accused of the infraction are notified of the charge. In the case of proven academic dishonesty, the student may be required to withdraw from the University.

LEAVES OF ABSENCE

A student who is in good standing may apply to the dean of students for a leave of absence, after which he/she may return to the University without formal application for readmission.

NO SHOWS

Students who fail to enroll for two consecutive semesters without taking a formal leave of absence will be administratively dismissed from the institution. To be considered for readmission after this dismissal, students must apply to the dean of the college.

Honors and Awards

DEPARTMENTAL HONORS

Students may be admitted to a program leading to a bachelor's degree with honors in a particular major at the beginning of the junior year and, in some cases, at the beginning of the senior year. In most cases, each student will work with a faculty member who serves as his or her honors advisor and assists with planning the honors research and thesis during the student's junior and senior years. The program may include a maximum of six courses in which the student works under the advisor's supervision. In some cases, students must pass a comprehensive examination given by the department in the senior year.

Students should check with the major department to obtain guidelines for the specific requirements for honors before the end of the sophomore year (although in some departments, applications for honors may be made in the second half of the junior year).

Admission to an honors program does not relieve students of any of the standard major regulations. A student's candidacy for honors will be terminated at the end of any term in which he/she has not maintained a standard of work satisfactory to the department. If candidacy is terminated for any reason, the amount of course credit to be allowed for honors courses will be determined by the College Board.

The department may recommend that a student graduate with honors, high honors, or highest honors. That recommendation is made to the dean of the college at the completion of the honors program and is announced at graduation. Consult individual department handbooks for details concerning acceptance into their honors programs.

ANNUAL HONORS

Dean's List

Each semester, the dean of the college publishes a list of students who have distinguished themselves by outstanding academic performance in the preceding semester. Honors are awarded to the top students in each class based on semester grade averages.

Latin Honors

Upon graduation, Latin honors are awarded at three levels: *cum laude*, *magna cum laude*, and *summa cum laude*. These general honors are determined by the College Board on the basis of eight semesters' work or its equivalent. Criteria, such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark, are used for determining the awarding of general honors. Ordinarily three quarters of a student's record at Clark must be graded if he/she is to be eligible for general honors.

Phi Beta Kappa

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs that are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity. Evidence of proficiency in mathematics and a foreign language is deemed highly desirable by the society.

Gryphon/Pleiades

Gryphon/Pleiades is the senior honor society at Clark. Its membership includes students who have been recognized by administration, faculty, and their peers for academic achievements and leadership in campus extracurricular activities. Members of Gryphon/Pleiades strive to further the best interests of Clark University. In addition, the society makes suggestions to the faculty, administration, and the student body for the improvement of campus life.

Fiat Lux Honor Society

The Fiat Lux Honor Society was created in 1988 as a student honor society recognizing combined qualities of scholarship and citizenship among Clark juniors and seniors.

Qualifications for selection include a minimum 3.2 grade-point average and a significant extracurricular contribution to the Clark community. Members of the society must pledge ten hours of volunteer service to the community each semester. Annual Fiat Lux Society events include society-sponsored speakers' forums.

Tuition and Other Charges

SUMMARY OF TUITION AND OTHER CHARGES

FIRST AND SECOND SEMESTERS

ACADEMIC YEAR 1993-94

Tuition		$16,600	
Health Services Fee		220	
Room:		2,300	
Residence Hall/House double room	2,300		
Residence Hall/House single room	3,400		
Residence Hall/House triple room	2,300		
Residence Hall/House single-in-double	3,700		
Board		2,100	
19 meals: $2,100; Declining Cash Balance Plan: $2,100; 14 meals: $2,100 (see Campus Food Services)			
Student Activity Fee		180	
Telephone (required for residence hall students)		100	
SUBTOTAL for continuing students			$21,500
Charges that apply to new students only:			
Contingency Deposit (refundable)		50	
Orientation Fee		135	
TOTAL			$21,635

OTHER FEES

Clark Student Health Insurance	576	single*

Students will be required to enroll in the Clark Insurance Plan unless they show proof of other coverage.

* $1,122 student/dependent; $1,668 student/2 or more dependents

Application Fee (undergraduate)	40

DEPOSITS

Admission Deposit	300
Residence Hall Deposit	100
Tuition Deposit (upperclassmen)	300

Note: Costs are subject to change from year to year.

GENERAL INFORMATION

Tuition, board, residence hall charges, and certain fees are due and payable prior to the beginning of each semester. The dates for 1993-94 are: August 1, 1993 for Semester 1 and January 1, 1994 for Semester 2. Students are not permitted to register for any semester until all financial obligations have been arranged satisfactorily with the University. A Budget Payment Plan is available and is explained later in this section.

There is a *late* fee of $25 assessed against all accounts not paid in full by the August and January due dates. In addition, *interest* at the rate of 1 percent per month (12.7% APR) will be charged on all past due balances (including tuition deposit).

PAYMENT OPTIONS

Clark offers several payment alternatives to the usual tuition payment each semester. These options may be used individually or in combination with each other to best suit the needs of Clark families.

1. *Family Education Loan*: Clark University is one of a few schools to offer this fixed-rate, supplemental education loan. This loan allows families to borrow up to the full cost of education at a fixed interest rate estimated to be below 9 percent. At this rate, monthly payments will be less than $11 per thousand borrowed. In addition, the loan may be secured with home equity to allow for possible tax benefits.
2. *Monthly Payment Plan*: Clark University, in cooperation with Academic Management Services, makes available a flexible, interest-free payment plan. This plan allows a family to make ten equal monthly payments beginning in May. You determine the amount of the bill to be covered–all or only a portion. The $50 application fee is the only charge and includes automatic insurance of the enrolled parent for the balance of the budgeted amount.
3. *Tuition Inflation Hedge*: Under this program, Clark University offers families the option of fixing the tuition rate for four years at the first-year level. To do so, families pay four years of tuition during the first year, at the current rate, avoiding any increases in tuition for the following three years. For more information and an application, please contact the assistant controller.

TRANSCRIPTS

Transcripts must be requested in writing from the Office of Student Records. There is no charge for unofficial transcripts. Official transcripts cost $3 each. Transcripts are not issued to students with outstanding financial obligations.

REFUND POLICY

Withdrawals from the University are processed in the Dean of Students Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The activity fee is refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University. First-year students receiving Title IV funds receive refunds in accordance with federal regulations.

When a student has left, but not withdrawn from, the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above.

NORMAL PROGRAM AND COURSE LOAD VARIANCE

A normal full-time academic program is eight course units per year (four course units per semester). Students may elect to vary this pattern by taking three course units during any semester, and a course load of three courses per semester is a full-time course load and is billed accordingly. Juniors and seniors who have received College Board permission may choose to take five courses in a semester at no additional charge. All students must complete a minimum of seven full-time semesters to meet degree requirements. Students may enroll in two units per summer. While there is no limit to the total number of summer courses students may take, normally only four units may be counted towards graduation.

Seniors in their last semester are expected to take the necessary number of units (up to five) for their degree. Full-time first-year or transfer students, in their first semester at Clark University, must enroll in a four-course program. Students re-entering the University, or returning from leaves of absence, also must enroll in a four-course program during their first semester. Individuals who are older and wish to consider matriculation into the undergraduate college on a nontraditional basis should consult with the dean of the college.

ORIENTATION FEE

A fee of $135 is assessed to all new students to cover services and activities provided during orientation.

CONTINGENCY DEPOSIT

All new undergraduates are required to pay $50 deposit to cover minor charges, such as unreturned library books, which may be incurred during the year. Students are billed each year for whatever charges are incurred; the balance is refunded upon completion of studies.

HOUSING DEPOSIT

The $400 fee submitted by first-year students to Admissions includes a $100 housing deposit. Each spring, a deposit of $100 is required of students in order to enter the room selection process. The deposit is credited towards the yearly housing fee and is nonrefundable.

APPLICATION FEE

A fee of $40 must accompany the application for admission to the University. It is *not refundable*.

STUDENT ACTIVITY FEE

A fee of $90 per semester, levied and administered by the Student Council, is required of all matriculated undergraduates except those on a program of study abroad. The Student Council allocates funds to student organizations that provide a wide range of cultural, social, and recreational activities.

ADMISSION DEPOSIT

For entering students planning to live on campus, a nonrefundable admission deposit of $300 *and* a housing deposit of $100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the $300 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark. Deposits are *forfeited* if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of $300 is required of all students planning to return to the University for their sophomore, junior, or senior years. It is payable by July 1 and is credited toward charges for the fall semester; the deposit of $300 is forfeited if the student does not enroll for the specified semester.

IDENTIFICATION CARD

Identification cards are issued during Orientation to all new students without charge. This card is an official college identification and is necessary for access to all campus facilities. Loss should be reported immediately to the director of the Higgins University Center. There is a $15 replacement charge for a lost I.D.

KEYS AND KEY SECURITY

Room keys, mailbox combinations, and residence hall entry cards are issued to students upon their arrival at Clark. Fees are charged for the replacement of keys and cards that are lost during the year, and it is mandatory to return room keys and entry cards before leaving campus at the end of the academic year.

Student Services

ORIENTATION

New students are introduced to life as a member of the Clark community through the Orientation program at the opening of their first semester. This program helps students plan a course of study and familiarizes them with Clark University and the city of Worcester. Orientation facilitates academic, residential, personal, and social adjustment to university life.

UNIVERSITY HOUSING

Clark University provides housing for approximately 1,500 students in eight residence halls and eight houses. The residential community is intended to provide students with a living and learning environment via social, educational, and recreational program opportunities. One residence hall, Dodd, is an all-women residence. All other halls and houses are coeducational. Special interest housing includes: a "quiet house," two "nonsmoking houses," a "global environment house," a "substance awareness house," a "year-round," and two general houses. First-year students, unless commuting from home, are expected to live in University housing and can choose between residences that house only first-year students or include members of all four classes.

Rooms for new students are assigned during the summer, and assignments are mailed to home addresses in late June or early July. Rooms for continuing students are determined in the spring of the school year by a room selection process. When the demand for University rooms exceeds the available supply, this system determines who receives guaranteed housing and who receives wait-list status. The room selection number, in combination with class standing, determines the order in which students choose their particular room. Upperclass students generally have first choice in selecting housing spaces according to the room selection number they receive. Most continuing students requesting University housing receive it, though some receive room assignments later in the summer. Requests for University housing, when honored, are considered binding for the full academic year as long as the student is registered. Conditions for living in University housing are specified in the housing contract that is required of all residents.

An option for sophomores, juniors, and seniors is to live off-campus in privately owned apartments. Approximately one-third of Clark students commute from home or live in private housing in the immediate neighborhood. A limited listing of available apartments is compiled by the Office of Housing and Residential Programs.

CAMPUS FOOD SERVICES

Clark University operates two food service facilities for the convenience of the Clark community and guests: the University Hall Diningroom and the International Cafe, both of which are located in the Higgins University Center. These facilities provide a wide variety of options for Clark students, including choices prepared at the serving line such as omelettes, grilled sandwiches, hamburgers, pizza, calzones, and over 15 different stir-fried selections. The International Cafe is open from 7AM until 1AM.

Clark's food service provides a money-back guarantee with the board plan contract. If a student is dissatisfied with a meal, the food service will produce an acceptable alternative or reimburse the student for the cost of that meal.

First-year students living in Clark's residence halls are required to select one of the three meal plans offered by the Clark University Food Service. All other students may prepare their own meals or choose a meal plan option. Students make their choices before registration. The meal plan options include:

19-Meal Plan: Students will be guaranteed 19 meals a week in the University Dining Hall.

14-Meal Plan: Students may eat any 14 meals per week either in the University Dining Hall or at the International Cafe.

Full Declining Balance: Students are credited with $1,050 per semester on their cash card to be used at the University Dining Hall or the International Cafe at any time.

The typical food service menu includes: a complete salad bar; deli meats, cheeses, and breads; custom-order stir fry; grilled items; pizza; and a wide variety of entrees. Meatless entrees are available at all meals. In addition, arrangements can be made to accommodate special dietary needs.

HEALTH SERVICE

The Clark University Health Service is a primary care outpatient clinic that provides on-campus health care to full-time matriculated undergraduate students. It is staffed by physicians, nurse practitioners, registered nurses, and support staff. The clinic, located on the first floor of Wright Hall at 30 Downing Street, is open Monday through Friday 9 a.m. - 5 p.m. There is always a physician on call when the Health Service is closed.

Students may make an appointment at the Health Service with a clinician for diagnosis, treatment, follow-up, or counseling regarding health problems. Gynecological and contraceptive services are available.

The Health Service staff has a holistic approach to health problems. Emphasis is placed on prevention, wellness, and health education. Staff members consider their roles to be congruent with, and an integral part of, the educational process.

Prior to registration, students are required to submit a completed history and physical exam form to Clark's Health Service. Massachusetts state law requires that college students born after 1956 must present evidence that they are immunized against measles, mumps, rubella, diphtheria, and tetanus in order to register for classes. As mandated by Massachusetts law, all full-time and part-time students must be enrolled in a qualifying student health insurance plan offered by the University or in another health insurance plan with comparable coverage. Failure to submit proof of comparable coverage will result in the student being automatically enrolled in the Clark plan and charged accordingly. In order for the University to be in compliance with state law, students may not register for classes until they are enrolled in an insurance plan.

PERSONAL COUNSELING

The Dean of Students Office is concerned with the academic and personal well-being of students. Professional counselors are available to assist students with a variety of issues and can make referrals to off-campus agencies when necessary or requested. The deans also provide a variety of services to assist students both in and out of the classroom. Services provided to students are held completely confidential.

OFFICE OF CAREER SERVICES

The Office of Career Services provides services and programs to assist students in making informed decisions regarding their career choices. The professional staff offers assistance in career and graduate school planning and in the internship and full-time job search. The following services are available:

- *Career Advisors* to meet with students who want to discuss their choice of major and/or career plans. Career advising helps students clarify their goals, preferences, skills, and strengths.
- *Career Library* that contains information on career fields, employers, internships, and graduate study. Information on job search strategies, interview techniques and occupations, as well as directories, annual reports, and literature about specific employers is also available. One of the Career Library's most valuable resources is the Alumni Contact File, listing by profession over 1,200 Clark alumni–willing to serve as career advisors to students–in Boston, Connecticut, New York, Washington, D.C., Chicago, and on the West Coast, as well as abroad.
- *Workshops* on resume writing, interview skills, and job search strategies plus a variety of panel presentations on specific career fields.
- *On-campus Recruiting Program*, which hosts each year over 100 employers and representatives of graduate schools who visit Clark to meet graduating seniors.
- *Reference Files*, a service that sends students' letters of recommendation to

prospective employers, graduate schools, or professional programs.

PARKING

All Clark students who plan to park their cars in University lots must be registered with Campus Police, since unregistered vehicles found in these lots may be towed at the owner's expense. On-campus parking includes the garage at the Kneller Athletic Center and the lots at Beaver, Downing, and Charlotte Streets. These are 24-hour resources. Commuter parking is also available at Maywood Street, the Administration Building, Charlotte Street, and the English House. These lots are limited to daytime parking only. Inquire at Campus Police for information on registration procedures and fees.

It is also important to note that Massachusetts law requires that all *out-of-state* students, living either on- or off-campus, register their cars with Campus Police. There is no fee, but failure to comply carries a fine of up to $50.

For those who plan to park on Worcester streets rather than in a University lot, please be advised that the City of Worcester strictly enforces its winter parking restrictions. To familiarize yourself with these regulations, obtain a copy of *Parking Rules and Regulations*, available in the Campus Police Office.

Athletics

Clark's sports programs are designed to stimulate interest and participation in a variety of physical activities, promote health and wellness, and encourage continuing participation throughout life.

GEORGE F. KNELLER ATHLETIC CENTER

Clark's athletic center houses intercollegiate, intramural, physical education, and recreational programs. The center has a full-size gymnasium that seats 2,000, with three multipurpose courts for basketball, volleyball, tennis, and badminton. The court can also be used for indoor baseball, field hockey, lacrosse, running, soccer, and softball. The Kneller Athletic Center includes a six-lane, 25-yard swimming pool with one- and three-meter diving boards; four racquetball/handball courts; two squash courts; two weight rooms–one with Cybex, Universal, and Fitron equipment, the other with free weights; a training room with facilities for rehabilitation (including a whirlpool); a dance studio, plus locker rooms, offices, a lounge, and a conference room.

Clark's outdoor sports facilities include a lighted field for baseball, lacrosse, and soccer; a field hockey field; a softball field; six elasta-turf tennis courts; and space for intramurals. Clark's fields are used for all intercollegiate athletic teams, as well as for intramural/recreational programs.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a strong interest in athletic competition, Clark has 17 intercollegiate teams including baseball, basketball, crew, cross country, lacrosse, soccer, swimming and diving, and tennis for men, as well as basketball, crew, cross country, field hockey, soccer, softball, swimming and diving, tennis, and volleyball for women.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, and the Massachusetts Association for Intercollegiate Athletics for Women. Clark is an N.C.A.A. Division III school, and approximately 300 Clark student athletes typically compete against New England schools including: Amherst, Assumption, Bates, Bowdoin, Brandeis, Coast Guard, Colby, Connecticut College, Holy Cross, Massachusetts Institute of Technology, Middlebury, Trinity, Tufts, Wesleyan, Williams, and Worcester Polytechnic Institute.

INTRAMURAL ATHLETICS

The Department of Athletics provides opportunities for members of the Clark community to participate in men's, women's, and coed intramural programs and tournaments, which emphasize team work and friendship in the spirit of competition. More than 50 percent of all Clark students participate in intramurals. Teams are formed from many different areas of the campus and include independent as well as residence hall competition. Intramural sports include badminton, basketball, bowling, ping pong, racquetball, soccer, softball, squash, touch football, volleyball, wallyball, water polo, and whiffle ball.

PHYSICAL EDUCATION PROGRAM

Clark's voluntary physical education classes offer instruction for men and women in areas such as aerobic exercise, badminton, ballet, dance, fitness, racquetball, self-defense, squash, swimming, tennis, water polo, weight training, and yoga. Additional classes may be offered in response to student interest. Registration for physical education classes usually occurs the week following academic registration and again after the midsemester break.

RECREATION

Clark's students, faculty, and staff use the Kneller Athletic Center for recreation in a variety of sports. Clark's outdoor facilities, which include tennis courts and playing fields, are also available to the University community.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women regardless of race, color, sex, sexual orientation, religion, age as defined by law, handicap, national origin or financial condition. Selection is competitive and based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondarily, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; three years of mathematics; three years of science; two years of both a social science and a foreign language; and other credit electives, including the arts, recognized in the secondary school curriculum. The University is most concerned with the strength of the student's academic program and therefore recommends this framework of courses. However, the University does value diversity and understands that some students may be following different high school curricular patterns.

ADMISSION TESTS

Applicants for freshman admission in September should submit the results of the Scholastic Aptitude Test (S.A.T.) or the American College Test (A.C.T.) no later than January. One Achievement Test is required: the English Composition Examination (preferably with essay); two others are recommended.

REGULAR ADMISSION

Candidates for freshman admission in September should initiate their applications as early as possible, usually during the first semester of the final year of secondary school, and no later than February 15. The deadline for January admission is November 15. A nonrefundable fee of $40 must accompany each undergraduate application unless a waiver is being requested. Clark participates in the Common Application Program and accepts photocopies of the appropriate forms, which are available in secondary schools.

EARLY ADMISSION

Exceptional students are invited to apply for early admission when encouraged and supported by enthusiastic recommendations from their secondary schools.

EARLY DECISION

As a service to students for whom Clark is clearly first choice, Clark has established an Early Decision Program. Applications in writing for an early decision must be submitted by December 1. Decisions are announced on or about January 15. Candidates will either be offered admission or will be deferred for further consideration with regular applicants. Although this program does not preclude applications to other colleges, participation by a student does require a commitment to withdraw such applications upon notice of acceptance by Clark.

INTERNATIONAL ADMISSIONS

Foreign students attending secondary schools *within* the United States may use the standard application forms. The Test of English as a Foreign Language (TOEFL) is required of all candidates whose native or official language is not English. TOEFL results for successful applicants are usually in the 550-650 range. For information, write to TOEFL, CN 6151, Princeton, NJ 08541-6151. Those attending secondary school in the United States for less than two years need not submit results from the Scholastic Aptitude Test (S.A.T.), but these students must submit TOEFL scores if their native language is not English. Financial aid for foreign students is limited and is based on completion of a Foreign Student Financial Aid Form. Those at secondary schools in the United States under a student visa will need another visa for university study. *The Certificate of Eligibility* (I-20), necessary to obtain a student visa, will be granted only after full admission and a receipt of a *Certification of Finances* signed by a bank official.

NOTIFICATION OF ADMISSION AND DEPOSITS

Regular notification of admissions decisions for September freshmen occurs on or about April 1, and Clark subscribes to the Candidates' Reply Date, May 1. For students planning to live on campus, a nonrefundable admission deposit of $300 and a housing deposit of $100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the $300 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark.

DEFERRED ADMISSION

Students who want to postpone enrollment need to submit a request in writing by the assigned reply deadline. Students who undertake academic work in the interim may not defer enrollment but must reactivate their applications by submitting official transcripts for review.

ADVANCED PLACEMENT/STANDING

Placement in advanced courses is determined by individual performance on departmental examinations, which may be oral or written, or on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. In addition, each score of 4 or 5 on an A.P. test will be credited with a value of one course-unit at Clark. Advanced standing may also be earned by transfer; presentation of an official transcript of college-level course work already completed is required. A maximum of one semester's credit (4 units) may be assigned to freshmen enrolling with advanced standing.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two- and four-year institutions. The majority of students admitted enter at the junior level, although many transfer to Clark with sophomore and advanced freshman standing.

The application deadline for all transfer candidates is April 15 (November 15 for places available at midyear).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work–secondary level and beyond–including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee, such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

TRANSFER CREDIT

Normally, credit is given for academic courses in the liberal arts previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of admission or upon receipt of final transcripts and is used in planning a course program and in provisional classification as a freshman, sophomore, or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally a minimum of two academic years at Clark is necessary for completion of degree requirements. Matriculated students should refer to the section on residency requirements.

CAMPUS VISITS AND INTERVIEWS

Prospective students are encouraged to visit the campus and are invited to write or call the Admissions Office (508-793-7431) for details. Both on- and off-campus interviews are available by appointment. Interviews are given by members of the admissions staff, faculty, or alumni. Interviews are not an admission requirement; however, they are strongly recommended.

Undergraduate Financial Assistance

The Office of Financial Assistance provides guidance to Clark students applying for financial aid and to those interested in student employment.

STUDENT EMPLOYMENT

Student employment opportunities at Clark include on-campus and off-campus part-time jobs and full-time summer employment, coordinated by the Office of Financial Assistance. At the beginning of each semester, Clark students with federal work-study awards receive a listing of available on-campus jobs and may choose a job best suited to their abilities and interests. The Office of Financial Assistance also maintains a list of on- and off-campus jobs available to students not receiving federal work-study awards. The average number of hours worked each week is between 10 and 12 hours.

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance. Special talent in music, art, and other areas, as well as leadership ability, also are considered. Aid is packaged–i.e., a combination of scholarships, grants, loans, and/or part-time employment. The Office of Financial Assistance assesses each student's financial circumstances and need through a uniform analysis of the Free Application for Federal Student Aid (FAFSA) for federal and state funds, and the Financial Aid Form (FAF), for institutional funds. When required, adjustments are made in accordance with University policies and procedures. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances.

The University expects that a student's resources for education will come first from family and his/her own savings and earnings. The University will make every effort to assist the student in obtaining the difference between the total cost and expected family resources. No student should fail to apply for admission to Clark University because of the inability of his/her family to pay total educational costs.

INDEPENDENT SOURCES OF AID

All applicants for financial aid are urged to pursue independent sources of financial aid. Clark cannot replace outside funds for which a student is eligible but fails to apply. Scholarships are often awarded to graduating seniors by high schools and/or private scholarship agencies in students' local communities. Additional information usually is available in guidance offices.

Applicants who are residents of Massachusetts are expected to apply for a *General Scholarship*. To apply, students must complete the Free Application for Federal Student Aid (FAFSA), which may be obtained from guidance counselors or financial aid offices. Residents of other states should investigate the possibility of using reciprocal state scholarships (i.e., CT, DC, MD, ME, NH, PA, RI, VT).

An important source of federal financial aid is offered in the form of *Federal Pell Grants*. These grants, which vary in amounts up to $2,300 per year, are available to students who demonstrate financial need according to federal methodology. All applicants for financial aid are required to apply for a Federal Pell Grant. Students may do so by listing Clark University in the College Release and Certification section of the FAFSA.

Federal *Stafford Loans* are now available to all students regardless of need. Students may borrow up to $2,625 the first year, $3,500 the second year, and $5,500 the third through fifth years of an undergraduate program. Students may borrow up to $8,500 per year of a graduate program. The subsidized version is limited to students who demonstrate financial need according to federal methodology. It is a variable interest rate capped at 9 percent. No payments are due, nor does interest accrue, until after graduation or until a student is enrolled on less than a half-time basis. It may be deferred for continued education. The unsubsidized version offers the same terms and conditions; however, interest begins to accrue during the in-school period.

Veteran's Benefits may be available for service veterans and children of deceased and/or disabled veterans. Eligibility can be determined by contacting the local Veterans Administration Office.

Rehabilitation Assistance may be available for students who qualify for educational benefits. Information concerning rehabilitation services can be obtained at the State Rehabilitation Office.

AID AWARDED BY CLARK UNIVERSITY

Clark University makes a commitment to entering students during their freshman year and in each subsequent year at Clark, as long as they continue to demonstrate financial need, continue to meet the standards of satisfactory academic progress, have filed all necessary application materials by the required deadlines, and have not exceeded program limitations of financial aid, and as long as federal and state funding to Clark's Office of Financial Assistance continues at the same level. Although any Clark student may apply for aid as an upperclassman, funding is guaranteed only to those students who received aid their first year at Clark and have met the above requirements.

Assistance at Clark is "packaged" in the form of scholarship, loan, grant, and/or employment from the following sources:

- *Clark University Scholarships*–a portion of the University income is reserved for this purpose, and gifts from alumni, parents, and friends provide additional scholarship funds. Eligibility for Clark Scholarships is determined under institutional methodology used in the analysis of the FAF.
- *Federal Supplemental Educational Opportunity Grants*–one of three campus-based federal aid programs available to college students demonstrating exceptional financial need. Continued support of this program is contingent upon annual Congressional allocations.
- *Federal Perkins Loans*–one of three campus-based federal aid programs available to college students demonstrating exceptional financial need. Loans made under this program carry a fixed 5 percent interest rate. Payment of principal and accrual of interest is deferred until after graduation or until a student is enrolled on less than a half-time basis. The loans carry a ten-year repayment schedule with a $40 monthly minimum. Continued support of this program is contingent upon annual Congressional allocations and the repayments of previous recipients.
- *Federal Work-Study*–one of three campus-based federal student aid programs. This work program allows eligible students the opportunity to work during the school year to earn money for personal expenses, travel, books, and supplies, and over the summer to earn money towards the following school year's educational expenses.

ENDOWED SCHOLARSHIPS

Most grants awarded by the University are designated Alumni and Friends

Scholarships. Funds for these scholarships are derived from named endowed funds. Because of the various restrictions placed on these funds, it is the policy of the University to select eligible recipients. Students should not apply directly.

APPLICATION PROCEDURES

In addition to filing an application for admission, all freshman candidates applying for financial assistance must submit a completed Free Application for Federal Student Aid (FAFSA) and Financial Aid Form (FAF) by February 15 and request that an analysis be forwarded to Clark University. These forms may be obtained from the secondary school guidance office. Offers of financial assistance will be made simultaneously with, but independent of, the decision of the Admissions Committee. Each recipient is required to verify the information reported on the FAF by submitting a copy of the parents' and student's most recent federal income tax return form. Early decision candidates should file an Early Version FAF by December 1. This form will be sent to those who indicate on their admissions applications they will be applying for aid.

Prospective transfer students who are requesting financial aid should submit the FAFSA and FAF to the College Scholarship Service at the same time application is made for admission. Each transfer student must submit a signed copy of the parents' and student's latest federal income tax return to the Office of Financial Assistance and request a Financial Aid Transcript from all colleges that the student previously attended. Award notification will be made after acceptance to the University. Applicants will not be required to post an admission deposit before receiving a financial aid decision. Awards are made as funds allow.

Upperclass students must reapply annually for financial assistance by submitting an updated FAFSA and FAF to the College Scholarship Service and an Application for Financial Aid to the Office of Financial Assistance by April 1. In addition, a signed copy of the parents' and student's previous year's federal income tax return form must be submitted to the Office of Financial Assistance by the deadline. Clark financial assistance is renewed as long as the applicant meets the requirements described in the first paragraph of this section, under *Aid Awarded by Clark University.*

The Graduate School

This section includes the following topics:

- General Information
- Inquiries and Admission
- Master's Programs
- Doctoral Programs
- Grading Policies
- Graduate Student Services
- Tuition and Other Charges
- Financial Aid

General Information

Founded in 1887, as the second graduate school in America (after Johns Hopkins), Clark has continued to offer outstanding master's and doctoral degree programs in the context of an intimate university. Over the years, Clark's graduate school has trained leading scholars and practitioners in a wide array of fields. It also has been at the center of major research breakthroughs in disciplines as diverse as physics, geography, and psychology.

Clark offers graduate programs leading to doctoral and master's degrees. Admission to Clark's graduate programs is open to holders of the bachelor's degree or its equivalent, and is determined on a competitive basis. All programs are administered by the Graduate Board. Completion of a master's degree program generally requires one or two years of study, and completion of the Ph.D. requires at least four years of study, although requirements vary across departments.

Doctor of philosophy degrees are offered in biology, the biomedical sciences, chemistry, economics, geography, history, physics, psychology, and women's studies. Doctoral students in the biomedical sciences and in psychology may also enroll in courses given cooperatively with the University of Massachusetts Medical School, the Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. Doctor of education degrees in special education and in educational management are offered by the Department of Education. Also offered is the individually designed interdisciplinary Ph.D. program, which is designed by the student and a faculty committee.

Master of arts degrees are offered in the fields of biology, chemistry, education, English, geography, history, international development, physics, psychology, and the interdisciplinary program for environment, technology, and society. The master of business administration degree is offered by the Graduate School of Management, and the master of health administration is offered by the Graduate School of Management in conjunction with the University of Massachusetts Medical School. Through the College of Professional and Continuing Education (COPACE), Clark also offers the master of public administration and the master of arts in liberal arts degrees.

Departments that do not, at present, accept candidates for graduate degrees may offer courses suitable for inclusion in a program of graduate study. Programs crossing departmental lines are also available, as noted above, through the University's individually designed Ph.D. program.

There is a wide variety of financial support available for incoming graduate students. Most departments offer teaching assistantships, fellowships, and research assistantships. Often these come with a stipend as well as tuition grants. Some specific examples of fellowship awards are listed at the end of this section. Additional information about departments and their offerings may be found in the section entitled *Departments and Courses.*

Inquiries and Admission to Graduate School Programs

Inquiries from both U.S. and international students concerning specific programs of graduate and postdoctoral work should be addressed to the chair of the department or program concerned. Please check catalog section, *Departments and Courses*, for names of department chairs and program directors.

Admission to the Graduate School may be granted *only* by the dean of graduate studies and research acting for the Graduate Board on the recommendation of a department or program of the University. Formal notification is by official letter from the graduate dean. *Application*: Applicants should communicate with the appropriate department or program head. The applicant will be provided with an application form, which, accompanied by a $40 application fee, should be returned to the department or program. In addition, the applicant should arrange for the forwarding of an official transcript of all undergraduate and any subsequent academic work and three letters of recommendation from persons who are competent to judge qualifications for graduate study.

Department or program heads may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to submit their scores on the Graduate Record Examination verbal, quantitative, and advanced tests. Applicants to the Graduate School of Management programs (master of business administration or master of health administration) are required to take GMAT rather than GRE examinations.

In addition to an application and $40 fee, a foreign student should provide a certified English translation of the official transcript, evidence of English proficiency (TOEFL), at least three letters of recommendation, and a statement concerning the applicant's financial resources or agency support.

Application Deadlines:

Psychology:	January 30 for forthcoming fall
Management:	One month prior to each semester (July 31, November 30, March 31)

Most other programs have a February 15 deadline for the forthcoming fall; contact the department or program of interest for the exact date.

Application materials cannot be returned. *A Financial Aid Form* must be submitted through the College Scholarship Service before awards can be made.

Admission: Admission to the Graduate School is valid for a specified time only and lapses after that period. If a student is admitted while still a candidate for a degree from another institution, an updated transcript noting the conferring of that degree must be sent directly to the dean of graduate studies and research.

Part-time Admission: Part-time graduate study is possible in some departments; see section entitled *Departments and Courses*.

Special Graduate Students: Admission as a special graduate student (nondegree candidate) is a simple enrollment process handled through the Office of Student Records. The grading system for these students is: A-F (with plus and minus) or Pass/Fail.

MASTER'S PROGRAMS

MASTER OF ARTS

Residency: An academic year (generally eight semester-courses) of study in residence is a minimum requirement for a master's degree. Individual departments or programs may require longer periods of residency. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: Language or other special requirements are included in the department listings in this catalog.

Candidacy: Application for admission to candidacy for a master's degree must be filed with the dean of graduate studies and research not later than the first week of the last full semester the student expects to spend in residence as a candidate for a degree. Forms are obtainable at the Graduate School office. Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of the major department or program.

Candidacy for the degree of master of arts is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years on vote of the Graduate Board.

Course and Examination Requirements: Each student must complete at least eight semester-courses in a program approved by the department. One course may be a research course devoted to the preparation of the thesis. Credit for a maximum of two courses at another institution may be approved by the dean of graduate studies and research upon recommendation of the department.

Each candidate must pass such written examinations as are required by the major department and a final oral examination by a committee of three or more, one of whom must be a representative approved by the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of the department and in a style, length, and format that is appropriate to the problem being researched. Regulations for submission of theses and degrees are available from the department and the Graduate School Office.

Graduation Fee: The fee for the master of arts degree is $100. This covers the cost of the diploma, publication of the precis in *Dissertations and Theses*, and binding of the library copy. It is payable when the thesis is deposited with the format advisor. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due to the University format advisor.

Alternative Program: A candidate for the degree of master of arts may be recommended for the degree without a thesis after passing a preliminary doctoral examination.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of $200 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status, see the *Graduate Tuition* section.

MASTER OF ARTS IN EDUCATION

The M.A. in education at Clark is an interdisciplinary degree program in which students examine issues of discourse, diversity, and socio-cognitive development across the curriculum, social institutions, and cultural groups. The program offers courses in education that deal with the development of multiple literacies and competencies across school subjects (mathematics, science, and language arts) and the diverse literacies and competencies that students bring from home. There is an effort to develop in M.A. students an appreciation of "effective teaching" and "teaching as research" and to enable students to make substantive connections between the world of research and the world of teaching. In addition, students are encouraged to take courses in psychology, sociology, urban geography, history, and women's studies, that provide additional perspectives on the challenges and possibilities of socio-cultural diversity in urban schooling.

Thesis: Students may choose one of two options, subject to the approval of the Department of Education. They may choose to: 1) prepare a thesis or 2) complete two additional courses.

Further information concerning the degree of master of arts in education may be found under the *Department of Education* section.

MASTER'S PROGRAMS IN THE COLLEGE OF PROFESSIONAL AND CONTINUING EDUCATION (COPACE)

Master of Arts in Liberal Arts

The Clark University Master of Arts in Liberal Arts (MALA) is an interdisciplinary student-designed degree. The MALA emphasizes the application of a variety of critical perspectives to cultural studies. Our program is grounded in the distinctive strengths and commitments of Clark University: interdisciplinary and international research and teaching; the development of innovative approaches in academic domains; the application of theory, acquired knowledge, and techniques to issues in both regional and global contexts.

The MALA degree program is designed for students wishing to pursue liberal arts education at the graduate level–students who have a commitment to academic study that acknowledges the limitations inherent in conventional divisions of academic disciplines.

For further information, contact the College of Professional and Continuing Education.

Master of Public Administration

The Master of Public Administration Program is designed to strengthen and advance the managerial and analytical skills of midcareer managers and executives in public organizations and nonprofit institutions. The goal of the program is to foster administrators who are capable of addressing the managerial, economic, and political aspects of public issues and problems.

The MPA program also seeks to assist those in other professions to make the transition into the administration of governmental, nonprofit, educational, or other public institutions.

For further information, contact the College of Professional and Continuing Education.

Certificate Programs

The University offers three postgraduate certificate programs: the Graduate Certificate in Gerontology, the Graduate Certificate in the Teaching of English as a Second Language, and the Graduate Certificate in Public Administration.

For further graduate information, contact the College of Professional and Continuing Education.

Certificate of Advanced Graduate Study (CAGS)

Clark University, through the College of Professional and Continuing Education, offers a Certificate of Advanced Graduate Study (CAGS) in Interdisciplinary Studies, designed for teachers, administrators, and other professionals. The program is open to those already holding a master's degree. Although increased specialization in a student's particular area is possible through the chosen concentration track, the Clark Interdisciplinary Studies CAGS, unlike traditional CAGS offered elsewhere, attempts to foster breadth beyond a discipline. Courses are chosen from several disciplines; the student's focus is interdisciplinary, incorporating and transcending established domains of study.

For further information, contact the College of Professional and Continuing Education.

MASTER'S PROGRAMS IN GRADUATE SCHOOL OF MANAGEMENT

Master of Business Administration

This degree is offered through the Graduate School of Management. For further information, see listings under the *Management* section.

Master of Health Administration

This degree is offered through the Graduate School of Management in conjunction with the University of Massachusetts Medical School, Worcester. For further information, see listings under the *Management* section.

Doctoral Programs

DOCTOR OF PHILOSOPHY

Only well-qualified candidates with proven ability in their special fields of study will be encouraged to proceed to the degree of doctor of philosophy.

Residence: The minimum requirement is one year of full-time study (six or eight semester courses; varies with department) beyond the M.A. or its equivalent in part-time work, in residence.

If the degree of master of arts has been earned at Clark, this requirement is in addition to the residence requirement for that degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand and must report such requirements in each case to the dean of graduate studies and research. If a language is required, either a testing service or on-campus tests are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in the fields of study, a prospective candidate takes a preliminary examination set by the major department. This examination may be written or oral, or a combination of both. The chair of the department may invite other scholars from within or outside the University to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has: (1) completed two full academic years of graduate work or its equivalent in part-time work, including at least one year at Clark University, (2) completed the departmental requirements in a foreign language, (3) passed a preliminary examination in the chosen field of study, (4) obtained the written endorsement of the major department. Application forms can be obtained from the Graduate School Office.

Candidacy for the degree of doctor of philosophy is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation, which is expected to make an original contribution to a specialized field of knowledge, is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is presented to the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 350 words, and a precis, not exceeding 75 words, both approved by the dissertation advisors, are also required.

Four weeks before the degree is to be conferred, a presentation-quality copy of the dissertation, together with two official title pages, an academic history, an abstract and a precis, must be delivered to the University format advisor. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis, and academic history forms can be obtained from the format advisor. The presentation-quality copy of the dissertation must be typed or computer-printed as prescribed in *Format Regulations for Theses, Dissertations, and Research Papers* and *Suggestions for the Preparation of Doctoral Dissertations for Microfilming*. These instructions are available from the format advisor.

The dissertation and abstract become part of the permanent collection in the University library. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Michigan, and is available for duplication on request to that company. The abstract is printed in *Dissertation Abstracts*.

Articles published in referred journals may be accepted in lieu of a dissertation with the approval of the department and the graduate dean. Requests for approval should include statements that attest to the originality and significance of the study.

Final Examination: An oral examination is required. Additional written examinations may be required if the major department so directs. The candidate is expected to defend the dissertation and, at the discretion of the examining committee, may be questioned on the entire specialized field of study. The oral examination is conducted by a committee of at least four members, composed of at least one representative approved by the Graduate Board and such members of the department and nonmembers from within or outside the University as the chair may appoint. The chair notifies the dean of graduate studies and research, at least one week in advance, of the time and place of the examination and the composition of the committee. The dean is authorized to invite any person from within or outside the University to be present and to assist in the examination.

Graduation/ Diploma Fee: The fee for the doctor of philosophy degree is $150. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses*, publication of the abstract in *Dissertation Abstracts*, and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the University format advisor.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of $200 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status see *Graduate Tuition* section.

DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

The Biomedical Sciences Ph.D. Program began in 1975 with the recognition that certain individuals without a standard academic background, but with previous research experience and an outstanding aptitude for independent research, may benefit from a relatively unstructured program leading to the Ph.D. degree. This is a cooperative program involving Clark University, the University of Massachusetts Medical School, Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. It utilizes the faculty, facilities, and varied research interests in the biomedically related sciences in the Worcester area. The primary criteria for admission are research ability and potential, and evaluation of applicants is based largely on evidence of their previously performed research. Award of the Ph.D. requires passing of a preliminary examination and presentation and defense of a research thesis. Competence in the major field in preparation for the preliminary examination can be achieved through independent study, directed study, or formal courses. The Ph.D. degree may be awarded by either Clark University or Worcester Polytechnic Institute, although dissertation research may be done at any of the participating institutions under the sponsorship of a faculty member from that institution. Areas for conducting of dissertation research reflect the varied research programs of faculty from the participating institutions. These include, but are not limited to: cellular and molecular biology; cell senescence; metabolism, endocrinology, and immunology; pharmacology and experimental pathology; reproductive biology, physiology, neurobiology, and behavioral science; biological engineering, related to nitrogen fixation and development of new symbiotic systems with blue-green algae; bio-mass and bio-energy (silviculture and fermentation technologies).

Admission: The primary criterion used in selection of students for this program is the demonstrated capacity of the applicant to do independent research. In addition to the application form, applicants submit official transcripts of undergraduate and graduate work, Graduate Record Examination (GRE) scores, three letters of reference, and evidence of outstanding research ability (e.g., publications, abstracts, etc.). More complete information may be obtained from the program director.

Applications and all supporting documents should be submitted to Dr. Joseph Bagshaw, Department of Biology and Biotechnology, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609.

DOCTOR OF EDUCATION

The program leading to the doctor of education is a research-oriented program with a central focus on the challenges of schooling in urban settings. It is an interdisciplinary program that integrates work in the cognitive sciences and work in disciplines concerned with social, cultural, and linguistic influences on learning. All students take a set of core courses, and then most specialize in one of two strands: 1) human development in the context of formal and informal schooling, or 2) language, culture, and literacy across the curriculum in a multicultural society.

See catalog section on *Department of Education* for further information.

Grading Policies

The grades of A and B (with plus and minus) are acceptable for graduate credit; anything lower than a B- is not acceptable. A Pass/Fail grading option is possible, where "P" (pass) signifies that the student has performed at a B- or above level. Incompletes are awarded at the discretion of the instructor.

Graduate Student Services

GRADUATE HOUSING

A limited number of on-campus housing spaces are available through the Office of Housing and Residential Programs. Incoming students have priority for this housing. Further details may be obtained from the Office of Housing and Residential Programs, or your academic department.

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. A limited listing of current housing opportunities is compiled by the Office of Housing and Residential Programs. Students without prior arrangement for University-owned housing are urged to arrive before registration to seek suitable housing in the area.

MEAL PLANS

Graduate students are invited to participate in one of the meal plans offered by University Food Service.

HEALTH INSURANCE

As mandated by Massachusetts law, all full-time and part-time students must be enrolled in a qualifying student health insurance plan offered by the University or in another health insurance plan with comparable coverage. Failure to submit proof of comparable coverage will result in the student being automatically enrolled in the Clark plan and charged accordingly. In order for the University to be in compliance with state law, students may not register for classes until they are enrolled in an insurance plan.

HEALTH SERVICE

Graduate students who wish to use the on-campus Health Service can either pay the Health Service fee each semester or they may use the Health Service on a fee for service basis. See listing under *Student Services* of the undergraduate college.

Immunization Requirements: In order to be registered at an institution of higher learning, Massachusetts law mandates that every full time graduate student born after 1956 must present a physician's certificate that such student has received the following immunizations:

1. at least one dose of mumps and rubella vaccine(s),
2. two doses of live measles vaccine given at least one month apart beginning at or after twelve months of age, and
3. a booster dose of tetanus within the last ten years. In the case of measles, mumps, and rubella, laboratory evidence of immunity is acceptable.

Graduate Tuition and Other Charges

ACADEMIC YEAR 1993-94

Full-time Graduate Students:

Tuition: $16,600 per academic year (or $8,300 per semester)

In departments that define a full load as four courses per semester, the per-course charge is $2,075. The per-course charge varies in some departments according to their specific definition of a full program. Students should contact their department chairs to find out which scale applies.

Part-time Graduate Students:

Tuition is charged on a per-course basis according to the scale used in the student's department (generally $2,075 per course).

Special Graduate Students: (nondegree candidates)

Tuition: $2,075 per course

Tuition and fees differ in the following programs:

Master of Business Administration
Master of Health Administration
(Contact the Graduate School of Management for further details.)

Master of Arts in Liberal Arts
Master of Public Administration
(Contact the College of Continuing and Professional Education for further details.)

OTHER FEES

Health Insurance–payable at registration (mandatory)

Single Students	$ 576
Student/one eligible dependent	$1,122
Student/two or more eligible dependents	$1,668

Health Service Fee (optional)	$ 220

Graduation Fee–payable at the time the thesis or dissertation is deposited with the Registrar.

Master's Degrees	$ 100
Doctoral Degrees	$ 150

Students who do not write a thesis or dissertation, including those receiving the degree through an alternative program, must pay this fee no later than the date on which theses are due to the University format advisor (generally, April 15).

Nonresident Fee:	$ 400

Payable August 1 and December 1: $200 per semester. All degree candidates who are not formally enrolled in coursework must pay the nonresident fee each semester until the final copy of the thesis or dissertation is approved by the University format advisor. If these fees are not paid by the close of the fiscal year, the student will be dropped from the program. (Fees double upon renewal of candidacy.)

Loan Deferment for Nonresident Students:

There are no provisions for student loan deferments for nonresident students. Only those enrolled in classes on at least a half-time basis are eligible for student deferment status.

Billing Policy:
Tuition and fees are due within 30 days of date of issuance of invoice. Accounts that extend beyond the 30-day period are assessed interest at the rate of 1.00 percent per month (12.7% APR).

Late Registration Fee: $25
A late fee of $25 is charged if registration is not completed by the end of the first week of the semester.

Refund:
Withdrawal from the University requires formal notice, in writing, to the dean of graduate studies and research. A refund will be made according to the date the dean receives the withdrawal notice. No refunds are made upon withdrawal from a course or courses, only upon withdrawal from the University. Refunds are as follows:

Prior to the start of classes:	100%
First week of classes:	80%
Second week of classes:	60%
Third week of classes:	40%
Fourth week of classes:	20%
After fourth week of classes:	0%

There is no refund on other charges, except board, when a student withdraws from the University.

Financial Aid

U.S. citizen or eligible non-citizen applicants for admission who request financial aid are required to file a Financial Aid Form with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the applicant's prospective department or program. Allocation of financial aid is not only based on an evaluation of the student's need.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS, AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified students by the University from endowed funds and from other sources. Financial aid to graduate students also is available in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students who receive awards must obtain permission from the department before accepting employment.

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chair of the department or director of the program in which the applicant expects to do major work. Late applications, after endorsement by the department, go to the dean of graduate studies and research for final approval.

RESEARCH FELLOWSHIPS

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

TEACHING ASSISTANTSHIPS

Teaching assistants are assigned a variety of duties according to the needs of the department. Responsibilities include conducting discussion sessions, supervising laboratory sections, holding tutorial sessions, and grading papers and projects. Assistantships typically involve a commitment of approximately half time (an average of 17 1/2 hours a week). A tuition-remission scholarship or fellowship accompanies this award, and a usual stipend is $7,650 to $9,150, depending on program or department. The stipend is paid over an eight- or nine-month period, again according to department policies.

Note that the departments of biology, chemistry, economics, English, geography, history, physics, and psychology require teaching experience for graduate degrees.

ASSISTANTSHIPS

Assistantships are available in several departments. Assistantships involve a variety of services, including research with appropriate stipends, and usually provide the student with experience which will be useful in later professional work.

Graduate Fellowship and Scholarship Funds

Stipends for fellowships and scholarships are provided by the following endowed funds. For further information about these funds, contact the Graduate School Office.

The Alumni Association Fund
The Association of Colored Peoples Memorial Scholarship Fund
The Carnegie Scholarship
The Elnora W. Curtis Fund
The Eliza D. Dodge Fund
The Joseph F. Donnelly Memorial Fund
The John White Field Fund
The Austin S. Garver Fund
The Graduate School Scholarship Fund
The Madeline T. and Winthrop G. Hall International Fellowship
The M. Howard and Frances Freedman Jacobson Graduate Fellowship Fund
The Walter W. (M.A. '20, Ph.D. '21) and Phyllis B. (M.A. '18, Ph.D. '19) Lucasse Graduate Fellowship Fund
The Charles H. Thurber Fund

Departmental Funds

Stipends for fellowships, scholarships, and research are provided by the following endowed funds. For further information about these funds, contact the Graduate School Office.

Biology

The Nunnemacher Endowment Fund. Established by Dr. Rudolph F. Nunnemacher, professor of zoology (1939-1983), this fund is used to defray tuition or laboratory fees for Clark University students attending summer courses in marine biology or pursuing research at the Bermuda Biological Station for Research, Inc.

Chemistry

The Gustaf H. Carlson ('26, M.A. '27, D.Sc. '77) Endowed Graduate Fellowship Fund. The fund provides a fellowship for graduate students.

Economics

The James A. Maxwell Fund. Established by fellow faculty members, former students, and friends of Dr. Maxwell, a Clark University professor for 42 years, the fund supports the library and/or a fellowship in economics.

The David J. Ott Scholarship. The fund provides a scholarship to a graduate student.

Geography

The Peter J. Condakes ('78) Endowed Research Fund. The fund is used to support research, with a preference on research addressing worldwide environmental concerns. (Not currently available.)

The Carl F. (M.A. '28) and Edith H. (M.A. '28) Holzhauer Endowed Graduate Student Fund. The fund provides a fellowship.

The Ella O. Keene ('37) Scholarship Fund. The fund provides a scholarship for women graduate students. (Not currently available.)

The William Libbey Fellowship Fund. Bequeathed by Mary E. Libbey, this fund supports a fellowship in physical geography and aids the department in that field.

The Mary E. and Irene L. Piper Scholarship. Established in memory of Mary E. and Irene L. Piper, this fund supports a fellowship in urban geography.

The Harry E. and Elizabeth S. Schwarz Endowed Graduate Student Fund. Established by Harry E. Schwarz, Clark University professor emeritus in international development, the fund provides a fellowship in alternate years to a U.S. citizen studying environmental management and a foreign citizen studying international development.

Psychology

The G. Stanley Hall Foundation Fund. The fund is to be used for research in genetic psychology.

The Frances L. Hiatt Fellowship in Psychology. One fellowship is offered each year to an outstanding new student (renewable up to two additional years).

The Clara A. Mayo Memorial Fund. Established by Joseph A. Weiss in memory of his daughter and Clark professor Clara A. Mayo (Ph.D.. '59), the fund is to be used to provide assistance to women graduate students.

Interdepartmental/Other Funds

The Lise Anne and Leo Beavers II Endowed Fellowship Fund. Established by Drs. Leo E. and Dorothy ('49) J. Beavers in honor of their son, Leo E. Beavers II, and in memory of their daughter, Lise Ann, the fund is to be used to provide fellowships to students or faculty members for research into the biochemical, neurological, or genetic causes and/or defects causing mental retardation or mental illness. Psychological studies are not eligible.

The Chester Bland ('29, M.A. '30) Fund. This fund is to provide aid to a promising student doing graduate work either in the university or engaged in research elsewhere under the direction of the department of history or of international relations in the department of government.

The Dr. Herman W. Dorn ('35, M.A. '36, Ph.D. '38) Endowed Memorial Graduate Fellowship Fund. Established by Mrs. Herman W. Dorn, in memory of her husband, the fund is used to provide a fellowship for a masters or doctoral candidate in biology or chemistry who is completing coursework or doing original research.

The E. Franklin Frazier Graduate Fellowship Fund. This fund supports teaching assistantships for United States minority graduate students.

The Morton L. "Sonny" Lavine Foundation. A memorial to Lieutenant Lavine of the U.S. Army, World War I, the fund is to be used for research in history or international relations.

The George E. Myers (Ph.D. '06) Fund. The fund supports research in education and psychology.

Departments and Courses

First-year Seminars

Biology 100 CELLULAR REGULATION/First-year Seminar
An introduction to cells, their ultrastructural features, metabolic activities, and the various mechanisms they employ in responding to changes in their environment. The roles played by membranes, receptors, and second messengers in regulating cell division, transcription, protein synthesis and other cellular activities are examined. The laboratory exposes students to a variety of microscopic and biochemical techniques employed in cell biology.
Mr. Curtis/Offered every year

Chemistry 011 SCIENCE METHODOLOGY/First-year Seminar
This relatively nonmathematical course is intended to provide a microcosm of the research experience. Each student studies a chemical compound by investigating never before measured physical/chemical properties (e.g., melting point, boiling point, solubility, density, etc.) of that compound. Participatory learning includes a literature search, structuring a hypothesis, determining an optimal experimental procedure, experimentation, data interpretation, and write-up. Collectively, the course characterizes a class of materials, culminating with the preparation of a short research note for a research journal, cowritten by each of the students.
Mr. Licht/Offered every other year

Chemistry 070 PRESERVING GENOMES/First-year Seminar
The laboratory-oriented course is offered as a first-year seminar. DNA will be isolated from endangered, rare, or exotic organisms, selected by the student. The DNA will be cut into fragments and "cloned" using techniques involving recombinant DNA. As a result, the genes from the organism will be preserved as a library of fragments of DNA that are maintained in a population of bacteria. The "genomic library" will be submitted to a national repository, thereby preserving the genes of the endangered species. There are no prerequisites; students are invited to share in the excitement of preserving genes that might otherwise be lost forever.
Mr. Thurlow/Offered every other year

Classics 100 ANCIENT GREECE AND PERSEUS 1.0/First-year Seminar
A survey of ancient Greek culture, art, archaeology and religion from the Bronze Age to the Hellenistic kingdoms. Students read primary texts in English translation, such as the Homeric epics, selected Greek tragedies and Plato's *Apology of Socrates*. Extensive use is made of the interactive CD-ROM Perseus system, an electronic, multimedia library of ancient Greek literature, history, art, and archaeology. Members of the class are assigned increasingly complex tasks in connection with the use of the Perseus system.
Mr. Burke/Offered every other year

Comp Lit 116 HESSE, KAFKA, MANN/First-year Seminar
A study of selected works including Hesse's *Steppenwolf*, Kafka's *The Trial*, and

Thomas Mann's *Death in Venice.* The focus of the course is on developing interpretations of individual works and contrasting the authors' literary techniques and world views.
Mr. Schatzberg/Offered every other year

Comp Lit 130 THE MODERN THEME: OUT OF THE PAST/First-year Seminar
An examination of literary masterpieces that reflect the tension between ideas of the modern and traditional values in art and society. Particular attention is given to the development of the themes of historical consciousness through literature; cultural forces shaping personal identity during different historical periods; the variety of artistic self-consciousness. Readings include representative works by Sophocles, Cervantes, Molière, Flaubert, Borges, Nabokov, Calvino, and Barth.
Mr. D'Lugo/Offered every other year

Comp Lit 145 CLASSICISM, ROMANTICISM, AND REALISM/First-year Seminar
The aim of this seminar is to acquaint students with the major styles of cultural sensibility that characterized Western civilization in the eighteenth and nineteenth centuries. By concentrating on broad cultural "movements" and works representative of them, the student can create a mental framework within which to identify and locate the intellectual currents of that time. This fosters a historical understanding of the works the student is likely to pursue in future courses in the humanities, the social sciences, and to some extent, also in the natural sciences. The two major historical readings in this course are Arthur O. Lovejoy's *The Great Chain of Being* and Jacques Barzun's *Classic, Romantic and Modern.*
Mr. Hughes/Offered every other year

Comp Lit 152 SONGS OF THE SELF/First-year Seminar
Through a study of selected lyric poems drawn from many different centuries and a variety of cultures, this course investigates the deepest roots of human self-expression, the power of metaphor, and the beauties of image-making in words. English-language texts are taken from the twentieth-century Anglo-American tradition (Moore, Auden, Eliot, Roethke, Levertov) and from certain older English-language contexts (Wyatt, Smart, Coleridge). As far as possible, texts from non-English-speaking cultures are presented both in literary translation and in the original. Students with a knowledge of a foreign language will be encouraged to do comparative work in that language and English.
Mr. Ferguson/Offered every other year

Economics 100 THE PERENNIAL TRADEOFF: EQUITY VERSUS EFFICIENCY/ First-year Seminar
Conflicting demands for equity and for efficiency introduce a continual tension in the conduct of economic policy in all large-scale economic systems. What do we mean by equity? What is efficiency? Why are both important and often in conflict? Students learn how organized thinking about economics can help them understand these central questions. May be substituted for Econ 010 as the first course in the Economics sequence. Fulfills the Comparative Perspective.
Mr. Van Tassel

English 166 FRAMEWORK FOR HISTORY/First-year Seminar
Identifies the important historical events from the cosmic big bang to the Hiroshima bang. Crossing boundaries between academic fields, the course provides a historical

framework into which the material of later courses will fit. Students are introduced to dates people, paintings, literary works, and many "isms"—everything under and including the sun. Fulfills Historical or Verbal Expression requirement.
Mr. Blinderman

Geography 025 EARTH SCIENCE AND DEVELOPMENT/First-year Seminar
The physical constraints on the development of agricultural resources, provision of water supplies, and urbanization are evaluated. The focus is on characteristics and issues central to the management of environmental resources, with emphasis on the range of physical environments found in Africa, Central America, and South America.
Mr. Lewis/Offered periodically

Geography 028 CITYSCAPES: URBAN PLANNING IN THE TWENTIETY CENTURY/First-year Seminar
Trapped in landscapes of our own making? From the traffic on the urban highway to the social isolation of the bland city streets, the urban landscape often frustrates our best efforts to create a caring and creative society. Can we imagine an alternative urban form based upon advanced technology, aesthetic harmony, and social justice? What city structure would meet the needs of all our changing lives and lifestyles, the single mother and the aging grandfather, the new immigrant and the established resident? Geography 028 investigates the urban visions of twentieth-century planners, from the utopian ideals of Ebenezer Howard and Frank Lloyd Wright to Robert Moses and the power brokers of modern New York. At the same time, we begin the process of re-imagining the city of the next century.
Mr. Angel/Offered periodically

Geography 105 THE KEEPING OF ANIMALS: PATTERNS OF USE AND ABUSE/First-year Seminar
Animals play a prominent role in human life. Their meat, milk, hides, and hair shelter and sustain us. Pets provide companionship and solace. Animal power provides traction, transport, and recreation. Pest and predators compete with humans for food, while diseases harmful to humankind lurk unseen in animal reservoirs. Images of goodness and evil, nobility and perfidy reflect the ambivalent attitudes and cultural prejudices that govern human responses to animals. This course explores the wide variety of cultural, historical, and ecological interactions that exist between people and animals, aquatic, terrestrial, or avian. It balances utilitarian and ethical perspectives on current patterns of use and abuse in the keeping of animals.
Mr. Johnson/Offered every other year

Geography 185 IMAGES OF THE EARTH/First-year Seminar
This course, open to first-year students only, provides an introduction to the images and graphic forms derived from remote sensing and cartography. It brings together the concerns of map-making, aerial photography, satellite imagery, surveying, and computer science to give us new ways of representing, analyzing, and understanding our planetary environment.
Mr. Steward/Offered periodically

History 030 EUROPE AND ITS FUTURE/First-year Seminar
Readings, discussions, and short papers, using utopian novels (Orwell's *1984* and Huxley's *Brave New World*), social commentaries, and lectures to focus on the course and prospects of modern European society. Not an introductory course for the major.

Fulfills the *verbal expression* requirement.
Mr. Borg/Offered every other year

History 031 GREAT BOOKS OF CHINA/First-year Seminar
Readings, lectures, discussions, and short papers based on some of the most important philosophical, historical, and literary texts in the Chinese intellectual tradition. Fulfills the *verbal expression* requirement.
Mr. Ropp/Offered every other year

I.D. 118 AFRICA THROUGH LITERATURE/First-year Seminar
This seminar explores some of the twentieth-century literature of Africa in order to gain an appreciation of its richness and to understand more fully the changes which have been taking place on that continent. The works selected focus around several themes: the impact of colonialism on African societies, the hopes and disillusionment surrounding the struggle for and achievement of independence; the changing lives of African women; and the complexities of race and class in the liberation struggles of black South Africans.
Ms. Thomas-Slayter/Offered periodically

Philosophy 113 AIDS: ETHICS AND PUBLIC POLICY/First-year Seminar
The HIV epidemic challenges not only our scientific and medical establishments, but our shared conceptions of social justice, professional fidelity, and interpersonal solidarity. This seminar examines a number of these issues in their multidisciplinary context. Special attention is given to the cultivation of university-level research, writing, and computer skills. Intensive tutorial assistance is provided by a senior peer advisor and teaching assistant.
Mr. Derr/Offered periodically

Psych 193 PSYCHOLOGY, COMMUNICATON, AND THE SELF/First-year Seminar
We explore the boundaries of such concepts as the mind, emotions and feelings, values and beliefs, language and languages, manners, and other cultural conventions, which in traditional psychology are more or less viewed as properties of the private individual. In addition, we try to connect these concepts with different definitions of "the Self" and explore how these concepts are expressed in different languages and communicated in different ways. The general aim of the course is to create awareness of cultural differences and commonalities and to relate this to studies in other areas. Fulfills the Language Perspective.
Mr. Bamberg/Offered periodically

Psych 195 PURSUIT OF AN INQUIRY/First-year Seminar
Designed primarily for incoming students, this course provides an opportunity for them to pursue a piece of independent scholarship in the field of their choice. Each must write a substantial term paper by the end of the semester. Class meetings are used to clarify the exposition of ideas and to train the participants in how to use the resources of the community for independent scholarship. Papers may be written on any topic the writer pleases. Psychology 101 is *not* a prerequisite.
Mr. Thompson/Offered every year

Ancient Civilization

PROGRAM FACULTY

Paul F. Burke Jr., Ph.D., *program coordinator*: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history

Shulamith Bitran, M.A.: Hebrew

Everett Fox, Ph.D.: Jewish ritual and folklore, Classical Jewish thought

William A. Koelsch, Ph.D.: cultural-environmental history, history of geography

Michael Pakaluk, Ph.D.: history of ancient philosophy, Plato, Aristotle

Rhys F. Townsend, Ph.D.: ancient Greek art and architecture, underwater archaeology, Classical tradition in Western art, early Christian and Byzantine art

PROGRAM IN ANCIENT CIVILIZATION

The Program in Ancient Civilization consists principally of courses offered by the four primary faculty participants, whose scholarly fields are art history, classics, Jewish studies, and philosophy. Courses offered by other Clark faculty that fall into the general category of ancient civilization will be cross-listed as available, and courses from other Worcester Consortium colleges may be used to enhance this major.

The program offers an interdisciplinary undergraduate major and makes available courses covering the entire spectrum of ancient Mediterranean culture including Greek, Hebrew, and Latin languages. Emphasis throughout the program is placed on developing familiarity with the ancient world for a sound understanding of the roots of modern Judaeo-Christian culture. The purpose of the major in particular is to supply the student with a sound interdisciplinary knowledge of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization.

THE MAJOR IN ANCIENT CIVILIZATION

Majors are expected to acquire a working knowledge of at least one of the principal languages of the ancient Mediterranean (Classical Greek, Hebrew, or Latin); this language component of the major program ensures direct access to the culture, literature, philosophy, and history of the ancient world. Program faculty also wish their courses to be accessible to the general undergraduate population in order that as many Clark students as possible may be introduced to the various aspects of the ancient world by the comprehensive series of courses brought together here. By incorporating art history, Jewish studies, and philosophy with what has been traditionally identified as classics (Greek and Latin language and literature), the Clark Program in Ancient Civilization presents established disciplines in a stimulating and original configuration.

Students majoring in ancient civilization, and in some related areas, are eligible to apply for admission to the Intercollegiate Center for Classical Studies in Rome, where they can spend a semester studying Classical literature and archaeology.

Major Requirements

In order to graduate as an ancient civilization major, a student must complete successfully at least ten courses in ancient civilization. These courses must include:

1. at least two courses, not both in the same department, from the group of foundation courses:

   Art History 101, *Introduction to Western Art I*

Art History 110, *Ancient Greek Art*
Classics 111, *Roman Art and Architecture*
Classics 121, *Introduction to Greek Culture*
History 174, *The Jewish Experience*
Philosophy 121, *History of Western Philosophy*

2. at least one semester course at or above the intermediate level (language 103) in Greek, Hebrew, or Latin
3. a one-semester senior seminar, to be taken preferably during the second semester of the senior year, to include the writing of a major research paper, and to be arranged in consultation with at least two members of the program faculty by the end of the junior year.

COURSES

A. ART HISTORY

101 INTRODUCTION TO WESTERN ART I
Refer to course description under Art History 101.
Mr. Townsend, Ms. Levesque/Offered every year

105 THE AEGEAN WORLD
Refer to course description under Art History 105.
Mr. Townsend/Offered every other year

106 INTRODUCTION TO ARCHAEOLOGY
Refer to course description under Art History 106.
Mr. Townsend/Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL
Refer to course description under Art History 109.
Mr. Townsend/Offered every other year

110 ANCIENT GREEK ART
Refer to course description under Art History 110.
Mr. Townsend/Offered every other year

114 ANCIENT CITIES AND SANCTUARIES
Refer to course description under Art History 114.
Mr. Townsend/Offered every other year

215 THE TEMPLE BUILDERS: ARCHITECTURE IN ANCIENT GREECE
Refer to course description under Art History 215.
Mr. Townsend/Offered periodically

219 SPECIAL TOPICS: ANCIENT ART
Refer to course description under Art History 219.
Mr. Townsend/Offered periodically

B. CLASSICS

GREEK

101/102 INTRODUCTORY GREEK
Refer to course description under Classics
Mr. Burke/Offered every year

LATIN

101/102 INTRODUCTORY LATIN
Refer to course description under Classics.
Staff/Offered every year

CLASSICS COURSES TAUGHT IN ENGLISH

005 ROMANS AND BARBARIANS
Refer to course description under Classics 005.
Mr. Burke/Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY
Refer to course description under Classics 124.
Mr. Burke/Offered every other year

135 CLASSICAL GREEK TRAGEDY
Refer to course description under Classics 135.
Mr. Burke/Offered every other year

157 THE AGE OF NERO
Refer to course description under Classics 157.
Mr. Burke/Offered every other year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD
Refer to course description under Classics 262.
Mr. Burke/Offered every other year

283 NATURE AND CULTURE IN THE ANCIENT WORLD/Discussion
Refer to course description under Geography 283.
Mr. Koelsch/Offered every other year

C. JEWISH STUDIES

HEBREW

101/102 ELEMENTARY HEBREW
Refer to course description under Foreign Languages and Literatures/Hebrew.
Ms. Bitran/Offered every year

103 INTERMEDIATE HEBREW
Refer to course description under Foreign Languages and Literatures/Hebrew.
Ms. Bitran/Offered every year

104 INTERMEDIATE/ADVANCED HEBREW
Refer to course description under Foreign Languages and Literatures/Hebrew.
Ms. Bitran/Offered every year

JEWISH STUDIES COURSES TAUGHT IN ENGLISH

123 THE MIDRASHIC TRADITION
Refer to course description under Foreign Languages and Literatures/Hebrew.
Mr. Fox/Offered every other year

D. PHILOSOPHY

121 SOCRATES, PLATO, AND ARISTOTLE
Refer to course description under Philosophy 141.
Mr. Pakaluk/Offered every year

250 PLATO/Seminar
Refer to course description under Philosophy 250.
Mr. Pakaluk/Offered every other year

251 ARISTOTLE/Seminar
Refer to course description under Philosophy 251.
Mr. Pakaluk/Offered every other year

E. HISTORY

174 THE JEWISH EXPERIENCE
Refer to course description under History 174.
Staff/Offered every year

276 MODERN JEWISH HISTORY AND THOUGHT
Refer to course description under History 276.
Staff/Offered every other year

F. COMPARATIVE LITERATURE

120 THE EPIC JOURNEY
Refer to course description under Comparative Literature 120.
Mr. Burke/Offered every other year

G. GEOGRAPHY

174 GREEKS AND BARBARIANS IN THE ANCIENT ECUMENE
Refer to course description under Geography 174.
Mr. Koelsch/Offered every year

Art

See Department of Visual and Performing Arts.

Asian Studies

PARTICIPATING FACULTY

Paul S. Ropp, Ph.D., *program director*: Chinese history
Michiko Y. Aoki, Ph.D.: Japanese language, literature, and culture
Cynthia H. Enloe, Ph.D.: Japanese and Southeast Asian politics
Robert C. Hsu, Ph.D.: Chinese and Japanese economics
Thomas P. Massey, Ph.D.: Chinese history and U.S.-Asian trade
Stefan Tanaka, Ph.D.: Japanese history

ADJUNCT FACULTY

Thomas Gottschang, Ph.D.: Chinese economics (College of the Holy Cross)
Douglas Johnson, Ph.D.: Southwest Asian geography
Mark Lincicome, Ph.D.: Japanese history (College of the Holy Cross)
Ronald K. Richardson, Ph.D.: British India
Claudia Ross, Ph.D.: Chinese language and linguistics (College of the Holy Cross)
Elizabeth Swinton, Ph.D.: Asian art (Worcester Art Museum)
Karen Turner, Ph.D.: Chinese history (College of the Holy Cross)
Alice Valentine, M.A.: Japanese history and culture

UNDERGRADUATE PROGRAM

Asian Studies is an interdisciplinary undergraduate program, which can be taken as a concentration within a regular major in comparative literature, history, international development, or government. In addition to Asian Studies courses offered at Clark, students may apply to study one year abroad at Kansai Gadai or Sophia University in Japan, to take advanced courses there in Japanese language and other Japan- and Asia-related fields. Through the Worcester Consortium for Higher Education, Clark students may also take courses in Chinese language and other Asia-related fields at the College of the Holy Cross. In cooperation with Clark's International Programs Office, students may also make special arrangements to study one year abroad in the People's Republic of China.

To concentrate in Asian Studies, a student must take six Asian Studies courses at least four of which must be nonlanguage courses, including Asian Studies 080, *Introduction to Modern Asia,* and an Asia-related seminar or independent research project. Students concentrating in Asian Studies are encouraged, though not required, to study one year abroad in Asia and to take at least one year of Chinese or Japanese language.

Students who concentrate in Asian Studies are also encouraged to take courses from the following list of related courses: GEOG 027, *Geography of the Third World;* GEOG 127, *Political Economy of Underdevelopment;* GEOG 284, *Landscapes of the Middle East;* GOVT 117, *Revolution and Political Violence;* GOVT 222, *Strategies of Development and Change in Communist Political Systems;* GOVT 261, *Women and Militarization in a Comparative Politics Perspective;* HIST 090, *Twentieth-Century Global History;* ID 125, *Development Problems;* and (depending on the topic) HIST 291, *Seminar in Advanced Topics in International Relations.* These courses do not carry Asian Studies credit, but they each deal with Asia at some point in the course. They are therefore recommended to supplement the list of regular Asian Studies courses that follows.

COURSES

031 GREAT BOOKS OF CHINA/Lecture, Discussion
Refer to course description under History 031.
Mr. Ropp/Offered every other year

080 INTRODUCTION TO MODERN ASIA/Lecture
A survey of modern historical trends in India, China, Japan, Southeast Asia, and Korea. Through political biographies, literary selections, and general histories, the course compares native traditions, colonial experiences, and postcolonial developments in Asia since 1800.
Mr. Ropp or Mr. Tanaka/Offered every year

084 JAPANESE CIVILIZATION/Lecture, Discussion
Refer to course description under History 084.
Mr. Tanaka/Offered periodically

101-102 ELEMENTARY JAPANESE/Lecture, Discussion
Refer to course description under Japanese 101-102.
Staff/Offered every year

103-104 INTERMEDIATE JAPANESE/Lecture, Discussion
Refer to course description under Japanese 103-104.
Staff/Offered every year

105-106 ADVANCED JAPANESE/Lecture, Discussion
Refer to course description under Japanese 105-106.
Prerequisite: Japanese 104-105 or permission of instructor.
Ms. Aoki/Offered every year

161 BRITISH INDIA
Refer to course description under History 161.
Mr. Richardson/Offered periodically

177 JAPANESE AND CHINESE ECONOMIES/Lecture, Discussion
Refer to course description under Economics 177.
Mr. Hsu/Offered every other year

181 TRADITIONAL CHINA/Lecture, Discussion
Refer to course description under History 181.
Mr. Ropp/Offered every other year

182 MODERN CHINA/Lecture, Discussion
Refer to course description under History 182.
Mr. Ropp/Offered every other year

184 MODERN JAPAN/Lecture, Discussion
Refer to course description under History 184.
Mr. Tanaka/Offered every other year

236 POLITICS OF PHILIPPINES AND VIETNAM/Lecture, Discussion
Refer to course description under Government 236.
Ms. Enloe/Offered every other year

255C CHINESE CIVILIZATION AND SOCIETY: SELECTED TOPICS/Proseminar (COPACE-MALA 355C)
An exploration of social, political, and economic themes in Chinese history.
Mr. Massey/Offered every other year

265 POLITICS OF JAPAN/Lecture, Discussion
Refer to course description under Government 265.
Ms. Enloe/Offered every other year

266C HISTORY OF US-JAPAN TRADE RELATIONS (COPACE)/Lecture, Discussion
Surveys the history of U.S.-Japan trade and economic relations from the early 1800s up to the present.
Mr. Massey/Offered every other year

280.1 SEMINAR IN CHINESE HISTORY
Refer to course description under History 280.1.
Prerequisite: Asian Studies 080 or 181 or 182, or by permission.
Mr Ropp/Offered periodically

280.4 RESEARCH SEMINAR IN JAPANESE HISTORY
Refer to course description under History 280.4.
Prerequisite: Asian Studies 080 or 084 or permission of instructor
Ms. Aoki or Mr. Tanaka/Offered periodically

281 THE PEOPLE'S REPUBLIC OF CHINA/Lecture, Discussion
Refer to course description under History 281.
Mr. Ropp/Offered every other year

282 CHINESE WOMEN IN LITERATURE AND SOCIETY/Lecture, Discussion
Refer to course description under History 282.
Mr. Ropp/Offered every other year

283 JAPANESE CULTURE AND ECONOMIC DEVELOPMENT
Refer to course description under History 283.
Ms. Aoki/Offered periodically

284.1 JAPAN SINCE WORLD WAR II/Lecture, Discussion
Refer to course description under History 284.1.
Staff/Offered periodically

285 JAPANESE FOLKLORE/Proseminar
Refer to course description under History 285.
Ms. Aoki/Offered periodically

288 THE ATOMIC BOMB/Proseminar
Refer to course description under History 288
Prerequisite: History 080 or 084, or permission of instructor.
Mr. Tanaka/Offered every other year

289 JAPANESE THOUGHT/Proseminar
Refer to course description under History 289.
Prerequisite: History 080 or 084, or by permission of instructor.
Ms. Aoki or Mr. Tanaka/Offered periodically

Astronomy

PROGRAM FACULTY

John Davies, Ph.D.: theoretical plasma physics

EMERITUS FACULTY

Roy S. Andersen, Ph.D.: history and philosophy of science

Astronomy is not a formal program or major. Courses in astronomy are recommended for both nonscience and science majors as part of their general education and provide a way of satisfying the *scientific perspective* requirement of the Program in Liberal Studies. However, astronomy courses do not satisfy departmental science requirements. Students interested in a career in astronomy should major in physics.

101 EXPLORING THE UNIVERSE/Lecture, Observational Laboratory
This course is intended for nonscience majors who wish to learn about the stars. It is designed for students who are interested in the concepts and methods of science. Topics are interdisciplinary in character, since astronomy involves physics, chemistry, biology, and geology. The use of mathematics is minimal; algebra is rarely employed. Half of the course is devoted to the planets and the sun. In the other half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, the universe, and life are explored. An important part

of the course is that students make observations of celestial objects including the moon, sun, planets, meteors, stars, nebulae, and galaxies using telescopes in the University observatory. This course satisfies the *scientific perspective* requirement in the Program of Liberal Studies.
Mr. Davies/Offered every fall

102 THE PLANETS AND SPACE EXPLORATION/Lecture, Discussion, Observation
This course concentrates on the solar system and past and future projects for its exploration. Topics discussed include the sun; comets and asteroids; planetary and satellite surfaces; and planetary interiors, atmospheres, and magnetic fields. The principles of the rocket and the orbit of objects in the solar system are treated qualitatively, but students should be prepared to do simple algebra. Selected projects in space exploration are studied in detail. The course can be taken as a first course in astronomy or as a second course after Astronomy 101. This course satisfies the *scientific perspective* requirement in the Program of Liberal Studies.
Mr. Davies/Offered every spring

Biochemistry and Molecular Biology

PROGRAM FACULTY

David L. Thurlow, Ph.D., *program director:* RNA-protein interactions

John J. Brink, Ph.D.: metabolic regulation, pharmacology, neurochemistry

M. Margaret Comer, Ph.D.: molecular genetics of bacteria

Frederick Greenaway, Ph.D.: bioinorganic chemistry, magnetic resonance

Donald J. Nelson, Ph.D.: protein chemistry, pharmacology

AFFILIATE FACULTY

George E. Wright, Ph.D.: pharmacology, drug-DNA polymerase interactions

UNDERGRADUATE PROGRAM

The Biochemistry and Molecular Biology Program offers an interdisciplinary major that draws on the faculty and course resources of the Departments of Biology and Chemistry. Designed to provide students with an in-depth exploration of an area of science that is perhaps the most exciting and actively growing of any today, the program is suitable for students who want to (1) pursue graduate studies in the area, (2) enter medical school with a strong background in basic science, or (3) take laboratory or other science-related positions after graduation. Those wishing to major in biochemistry and molecular biology must select an advisor within the program and file a plan of study with the program director.

MAJOR REQUIREMENTS

Students first obtain a solid grounding in biology, chemistry, physics, and calculus and then take *Biochemistry*, a year-long course sequence that covers our current understanding of the field. After that, there is a choice between two "tracks," or alternative ways to complete the major, depending on the individual's interests.

The core curriculum consists of the following required courses:

Introduction to Calculus (Math 120 and 121, or 124 and 125)
Introduction to Physics (Phys 110 and 111, or 110 and 112)
Introductory Chemistry (Chem 101 and 102)
Introduction to Biology (Biol 101 and 102)
Organic Chemistry (Chem 131 and 132)
Physical Chemistry I (Chem 260)
Biochemistry I and II (Bcmb 271 and 272)

The student will also complete *one* of the following two groups of courses, emphasizing either biochemistry or molecular biology.

Courses required for the biochemistry track:

Genetics (Biol 118) or *Microbiology* (Biol 109)
Cell Biology (Biol 137) or *Physiology* (Biol 240)
Bioanalytical Chemistry (Bcmb 144)
Biophysical Chemistry (Bcmb 264)

Courses required for the molecular biology track:

Genetics (Biol 118)
Cell Biology (Biol 137) or *Microbiology* (Biol 109)
Molecular Genetics (Bcmb 228) or *Structure and Function of Nucleic Acids* (Bcmb 276)
Recombinant DNA (Bcmb 231)

In addition, students must complete two additional courses related to biochemistry and molecular biology. This requirement may be satisfied with any of the program offerings, or a directed research course, or any biology or chemistry course in the list above (and not already used to fulfill a requirement), or other biology or chemistry courses approved by the advisor.

HONORS PROGRAM

A student interested in the honors program should contact the program faculty member with whom the student would like to do research and then apply in writing to the program director for admission. A "B" average is required. In addition to the course requirements listed above, honors candidates must (a) carry out a research project under the supervision of a faculty member in the Biochemistry and Molecular Biology Program, (b) submit an honors thesis or publication based on the research project, (c) present the research results in a public seminar, and (d) pass a comprehensive oral examination. Students are encouraged to begin their research in the summer following the junior year, if not earlier.

COURSES

105 MOLECULAR BIOLOGY/Lecture

An examination of the molecular basis of life. Topics include the biological macromolecules (DNA, RNA, proteins), DNA replication, the mechanism of protein synthesis, the genetic code, gene regulation, introns and other complexities of eukaryotic genes, and

the origin of life. Prerequisite: Biology 101 and 102. Chemistry 101/102 recommended.
Ms. Comer/Offered every year

144 BIOANALYTICAL CHEMISTRY/Lecture, Laboratory
This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics discussed include: chromatography, electrophoresis, immunochemistry, ultracentrifugation, absorption and fluorescence, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 132.
Mr. Nelson/Offered every other year

228 MOLECULAR GENETICS/Lecture, Seminar
Explores recent discoveries in the molecular genetics of prokaryotes and eukaryotes, with emphasis on new findings from recombinant DNA technology and DNA sequencing. Topics include: protein synthesis, RNA transcription, gene regulation, repetitive DNA, gene cloning, split genes, gene families, transposable elements, oncogenes, and antibody gene rearrangement. Intended primarily for seniors and graduate students. Prerequisite: Bcmb 272 or Biology 118 or permission of instructor.
Ms. Comer, Mr. Thurlow/Offered every other year

231 RECOMBINANT DNA/Lecture, Laboratory
An introduction to gene cloning techniques. Students clone *Escherichia coli* DNA in a plasmid vector; specific experiments include DNA purification, restriction enzyme digestion, agarose gel electrophoresis, DNA ligation, bacterial transformation, genetic characterization of recombinants, restriction mapping, and DNA sequencing. Two laboratory periods per week. Prerequisites: Biology 118 in addition to Biology 109 or Bcmb 271.
Ms. Comer/Offered every other year

252 BIOINORGANIC CHEMISTRY/Lecture
This course discusses the chemistry of metals in biological systems and models of these systems. There is a lengthy introduction to general principles and theories of inorganic chemistry and of metal ion and drug transport in biological systems. This is followed by an introduction to physical techniques used in studying metalloproteins. The major part of the course is a discussion of the application of these principles and methods by way of a survey of metallobiological systems. Prerequisite: Permission of instructor.
Mr. Greenaway/Offered every other year

264 BIOPHYSICAL CHEMISTRY/Lecture, Laboratory
This rigorous course in physical chemistry, offered as an alternative to Chemistry 262, emphasizes the physical chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, and x-ray diffraction. Prerequisite: Chemistry 260.
Mr. Nelson/Offered every other year

271 BIOCHEMISTRY I/Lecture, Laboratory
272 BIOCHEMISTRY II/Lecture
This two-semester course provides a comprehensive and up-to-date survey of the field of biochemistry. The first semester covers cell metabolism and protein structure and function; the second semester deals with nucleic acid and protein metabolism and other topics. A laboratory component for the first semester acquaints students with

methods and instrumentation used in biochemical research. Prerequisites: Biology 101, 102, and Chemistry 132.
Mr. Brink, Ms. Comer, Mr. Nelson, Mr. Thurlow/Offered every year

273 NEUROCHEMISTRY/Lecture

The metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes, pain, and emotion are discussed in terms of biochemical mechanisms. Prerequisite: Biology 101, 102, and Chemistry 132, or permission of instructor.
Mr. Brink/Offered every other year

275 PROTEIN CHEMISTRY/Lecture

Discusses the structure and function of biologically important macromolecules. Particular emphasis is placed on proteins (enzymes and noncatalytic proteins), protein synthesis from nucleic acids, and the structure and function of biological membranes. Prerequisite: Chemistry 132.
Mr. Nelson/Offered every other year

276 STRUCTURE AND FUNCTION OF NUCLEIC ACIDS/Lecture

This course discusses principles of nucleic acid structure, including types of helices, primary structure, secondary structure, and supercoiling. In the second half of the course, students discuss papers relating the principles of structure to a particular function such as storage, expression of information, catalysis, and evolution of the genetic code. Prerequisite: Biochemistry 272.
Mr. Thurlow/Offered every other year

277 BIOCHEMISTRY OF DISEASE/Lecture, Discussion

This course considers biochemical systems that are perturbed in metabolic regulatory processes, as in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components also are considered. Prerequisite: Biology 101, 102, and Chemistry 132; or permission of instructor.
Mr. Brink/Offered every other year

299.1 DIRECTED READINGS/Discussion

Advanced readings in the scientific literature under the direction of a professor. Prerequisite: permission of instructor.
Staff/Offered every semester

299.2 DIRECTED RESEARCH/Laboratory

Individual investigations involving laboratory research under the direction of a professor. Offered for variable credit. Prerequisite: permission of instructor.
Staff/Offered every semester

299.9 INTERNSHIP

Internships are arranged through the Internship Office within the Office of Carreer Planning and Serices. Students may register under Bcmb 299.9 provided that the Clark internship supervisor is a member of the Biochemistry and Molecular Biology Program.
Staff/Offered every semester

Biology

DEPARTMENT FACULTY

Todd P. Livdahl, Ph.D., *chair:* population biology, community ecology, evolution, biostatistics

Vernon Ahmadjian, Ph.D.: plant biology, mycology, symbiosis

John J. Brink, Ph.D.: biochemistry, neurochemistry, nutrition

M. Margaret Comer, Ph.D.: molecular genetics

Joseph C. Curtis, Ph.D.: cell biology, electron microscopy, endocrinology

H. William Johansen, Ph.D.: phychology, marine biology

Linda M. Kennedy, Ph.D.: physiology, neurobiology, sensory function, taste

Timothy A. Lyerla, Ph.D.: somatic cell genetics, genetics and development of vertebrate pigmentation

John T. Reynolds, Ph.D., M.P.H.: applied and environmental microbiology, environmental health

Nicholas S. Thompson, Ph.D.: animal behavior, evolutionary theory

ADJUNCT FACULTY

Charles H. Blinderman, Ph.D.: history of biology, Darwinism, human evolution

Halina S. Brown, Ph.D.: health and risk assessment, environmental chemistry, regulatory toxicology

Stanley R. Herwitz, Ph.D.: hydrology, soil/water plant relationships, biogeography, field methods and instrumentation

Donald J. Nelson, Ph.D.: biochemistry, bioinorganic chemistry

Thomas A. Schoenfeld, Ph.D.: developmental psychobiology, olfaction, neuroanatomy

David L. Thurlow, Ph.D.: molecular biology

AFFILIATE FACULTY

Clayton B. Cook, Ph.D.

Craig Ferris, Ph.D.

UNDERGRADUATE PROGRAM

The department offers courses that (1) prepare students for work and advanced study in the biological and biomedical sciences, (2) provide support for other programs within the University that require students to obtain a background in one or more subfields of biology, and (3) meet the needs of nonscience majors who wish to integrate the perspectives of the science of biology into a liberal arts curriculum. The major in biology is especially suitable for students who intend to go on to professional schools in the health sciences or graduate work in a variety of subfields of the biological sciences. Requirements for the biology major include:

- eight courses in biology, including Biology 101 and 102 (see below)
- two courses in chemistry (Chemistry 101 and 102)
- two courses in mathematics (Math 111 and 112 or Math 120 and 121)
- two courses in physics (Physics 110, and Physics 111 or 112);
- two additional lecture/laboratory courses in chemistry (usually Chemistry 131 and 132), geology, or physics;

- nine courses outside the fields of biology, chemistry, geology, mathematics, or physics.

Science and mathematics courses offered to meet the major requirements must be taken for a grade and may not be taken with a "pass" option.

Of the eight required biology courses, at least one must be completed in each of the following areas:

1. **cellular and molecular biology**, including *Molecular Biology* (Biology 105), *Genetics* (Biology 118), *Cell Biology* (Biology 137), *Biochemistry* (Biology 217);
2. **organismal biology**, including *Microbiology* (Biology 109), *Introduction to Plant Biology* (Biology 110), *Symbiosis and Parasitism* (Biology 211), *Physiology* (Biology 240); and
3. **population biology**, including *Marine Biology* (Biology 114), *Ecology* (Biology 216), *Population Biology* (Biology 220).

Please note that the two-semester course, *Introduction to Biology* (Biology 101 and 102), is a prerequisite for all other courses in biology that will be used to meet the requirements for a major.

Prospective majors are urged to consult with an advisor selected from the department's faculty. With careful guidance, a student can maximize the benefits associated with the options available within the major. Included among these options are opportunities to participate in ongoing research in the honors program, specialized research courses, and internships.

AREAS OF EMPHASIS

The department encourages students to identify an area to emphasize within biology, and to plan a sequence of courses that will provide depth of exposure to the topics within that area, including a research experience if possible. The department maintains active research programs in three general fields of study; courses recommended within each focal area are identified below.

Molecular and Cell Biology: *Molecular Biology* (Biology 105), *Microbiology* (Biology 109), *Introduction to Plant Biology* (Biology 110), *Genetics* (Biology 118), *Cell Biology* (Biology 137), *Biochemistry* (Biology 271, 272), *Nutrition and Metabolism* (Biology 170), *Somatic Cell Genetics* (Biology 227), *Molecular Genetics* (Biology 228, Biology 231), and *Biochemistry of Disease* (Biology 277).

Neurobiology: Students may chose a formal concentration in neuroscience (see below) or focus their advanced work in this area with courses selected from the following group: *Neuroscience* (Biology 140,141), *Cell Biology* (Biology 137), *Physiology* (Biology 240), *Neurophysiology* (Biology 247), *Developmental Psychobiology* (Biology 274), *Neurochemistry* (Biology 273), *Neuroanatomy* (294), and *Neuroendocrine Mechanisms of Behavior* (Biology 295).

Ecology and Evolution: *Biogeography* (Biology 103), *Introduction to Plant Biology* (Biology 110), *Marine Biology* (Biology 114), *Ecology* (Biology 216), *Population Biology* (Biology 220), *Genetics* (Biology 118), *The Paradox of Animal Sociality* (Biology 135), *Oceanic Islands: Geology and Ecology* (Biology 201), *Watershed Ecology* (Biology 204), *Symbiosis and Parasitism* (Biology 211), *Topics in Marine Biology* (Biology 223), and *Biostatistics and Computer Applications* (Biology 280).

NEUROSCIENCE CONCENTRATION

A biology major interested in a career in any of the physiological sciences, medicine, or health care, may wish to concentrate in the interdisciplinary study of neuroscience. An undergraduate who wishes to focus on neuroscience can major in either biology or psychology with a concentration in neuroscience. Both major concentrations require similar course work. Those interested in a psychology major should refer to the psychology section of this catalog.

Students taking a neuroscience concentration with a major in biology must fulfill the requirements of the biology major and take the following courses:

- *Neuroscience I and II*, (Biology 140 and 141)
- four additional courses selected from a list of approved neuroscience course offerings (available in the department office)
- a capstone research project to be started no later than the second semester of the junior year. This project must be under the direction of a full-time neuroscience faculty member.

Students with a biology neuroscience concentration are strongly encouraged to take *Genetics, Cell Biology,* and *Physiology.* Those with a neuroscience concentration are encouraged to take *Biochemistry,* computer science courses, (e.g., *Computer Programming I*), and an appropriate philosophy course (e.g., *Biomedical Ethics, Philosophy of Science, Philosophy of Mind,* or *Philosophy of Biology*). Concentrators are also encouraged to take humanities courses and to become proficient in a foreign language.

Interested students will find more information under the Neuroscience Program description within the Departments and Courses section of this catalog.

SPECIAL FIELD COURSES

Clark University maintains formal affiliations with the following organizations, enabling students to apply for admission and preferential financial aid consideration for two special course programs:

The ***Bermuda Biological Station for Research*** is an internationally renowned center for marine biological and oceanographic research. A course, *Oceanic Islands: Geology and Ecology,* uses the Biological Station as a site for field trips; in addition, intensive summer field courses are available for qualified Clark students (*Analysis of Marine Pollution, Biological Oceanography, Zooplankton Ecology, Global Environmental Change, Tropical Marine Invertebrates, Biology of Fishes, and Ecophysiology of Corals, Seagrasses, and Mangroves*). Any of these courses can be taken for biology major credit.

The ***School for Field Studies*** operates five centers at which semester-long, field-oriented courses may be taken for four to five full-course units:

- *The Center for Rainforest Studies* (Australia)
- *The Center for Marine Resource Studies* (Virgin Islands)
- *The Center for Wildlife Management Studies* (Kenya)
- *The Marine Mammal Studies Program* (Baja Mexico)
- *The Center for Studies in Sustainable Development* (Zimbabwe)

Clark students are also eligible for admission into summer courses at those five centers or at satellite sites in the Adirondack Mountains (*Acid Rain: Changing Aquatic Ecosystems*), Alaska (*Ecology of Bald Eagles, Harbor Seals: Dynamics of a Population in Crisis*), Costa Rica (*Tropical Cloud Forest Ecology*), Ecuador (ethnobotany), the Rocky Mountains (*Landscape Ecology*), Greece (*Conflicts in Ecological Management: Sea Turtle Survival*), Mexico (*Endangered Monkeys*), the North Atlantic (*Humpback Whale Ecology*), and North Carolina (*Biology and Behavior of Bottlenose Dolphins*). Students interested in taking any of these courses for credit toward the major must first take at least one course in either the organismal or population areas (biology course categories 2 or 3 described above).

The specific course offerings at the Bermuda Biological Station and the School for

Field Studies may change each year. Recent, detailed information on the School for Field Studies and the Bermuda Biological Station is available in the department office. Any students who wishes to apply for these or other off-campus course programs is urged to consult with his ore her advisor or department chair to ensure that the program will satisfy the student's needs for a well-planned biology major.

HONORS PROGRAM

Well-qualified upper-division majors in biology are eligible for admission to a program that can lead to a bachelor of arts degree with honors in biology. A candidate for honors in biology must meet all requirements of the major, maintain a high grade point average, complete an independent research project under the direction of a departmental faculty member, prepare an acceptable thesis, and pass a final comprehensive examination. The criteria for admission into the honors program are outlined in material available from the department.

INTEGRATED B.A./M.A. DEGREE PROGRAM

This plan, which enables students to complete the requirements for the bachelor of arts and the master of arts degrees within five years, is intended for students who develop sharply focused research interests. Undergraduates who will have completed the chemistry, mathematics, and physics requirements for the biology major by the end of their third year may apply for admission to this program during the second semester of their junior year. Students accepted into the program will be advised individually by a committee of faculty members who will set forth the specific course requirements and research expectations for the master's portion of the program. Courses taken at the 200 level or higher may be counted toward the course requirements for both the bachelor's degree, which will normally be awarded after the fourth year, and the master's degree, normally awarded after the fifth year. A successful preliminary examination, submission of a thesis, and a final examination based on the contents of the thesis are required of all master's degree recipients. Specific requirements of the program and application procedures are available in the department office.

GRADUATE PROGRAMS

The department offers course work leading to the master of arts and doctor of philosophy degrees in biology. The department has three foci for graduate emphasis: molecular and cell biology, neurobiology, or ecology and evolution.

It will be assumed that all students admitted to the department's graduate program will be working toward the doctoral degree, but it may be appropriate that some students complete the master's program before beginning doctoral work. Students applying for admission to either program must demonstrate adequate preparation in the basic sciences, an overall undergraduate record of *B* or better, and satisfactory scores on the Graduate Record Examination. Tuition scholarships and research and teaching assistantships are available to qualified students. Further information can be obtained from the department chair.

MASTER OF ARTS

A candidate for the master of arts degree must complete three to four semesters of academic work, pass a qualifying examination before the end of the second semester in residence, acquire teaching and research experience, and defend an acceptable thesis. Specific requirements for individual students will be determined by the faculty advisors.

DOCTOR OF PHILOSOPHY

Qualified students may be admitted into the doctoral program. The minimal requirements for a candidate for the doctoral degree are determined by the University and can be found in the section of this catalogue describing the Graduate School. Additional requirements and the details of individual programs will be determined by the student's advisory committee.

COURSES OFFERED FOR SCIENCE MAJORS AND OTHER QUALIFIED STUDENTS

101 INTRODUCTION TO BIOLOGY I/Lecture, Laboratory
102 INTRODUCTION TO BIOLOGY II/Lecture, Laboratory

A two-semester course designed with three goals in mind: (1) to provide students with an understanding of the unifying themes in modern biology, (2) to introduce students to the diversity of life forms at all levels of organization, and (3) to illustrate the methods and modes of scientific inquiry in the biological sciences. The emphasis is on organismic and evolutionary biology during one semester and on cellular and molecular biology during the other semester. Both semesters must be completed for enrollment in advanced courses offered to satisfy the requirements of the biology major. Prior approval of the chair of the department must be obtained if a qualified student wishes this requirement to be waived.
Staff/Offered every year

103 BIOGEOGRAPHY/Lecture

Past and present geographical distributions of plant and animal species are considered in relation to continental drift, species interactions, dispersal strategies, biological evolution, and human activity. Island biogeography and the biogeography of tropical vascular plants are emphasized. Prerequisites: Biology 101 and 102.
Mr. Herwitz/Offered every year

105 MOLECULAR BIOLOGY/Lecture

An examination of the molecular basis of life. Topics include the biological macromolecules (DNA,RNA, proteins), DNA replication, the mechanism of protein synthesis, the genetic code, gene regulation, introns, and other complexities of eukaryotic genes and the origin of life. Prerequisites: Biology 101 and 102. Chemistry 101/102 recommended.
Ms. Comer/Offered every year

109 MICROBIOLOGY/Lecture, Laboratory

An introduction to the fundamental principles and methods of microbiology with applications to the biomedical and environmental sciences. Emphasis is on bacteriology. Prerequisites: Biology 101 and 102 and Chemistry 102, or permission of instructor.
Mr. Reynolds/Offered every year

110 BOTANY/Lecture, Laboratory

Structure, development, and evolutionary relationships of plants are examined along with plant functions such as photosynthesis, communication, and transport. Aspects of the molecular biology of plants, plant ecology, genetics, hormones, and nutrition are discussed. The diversity of plants is reviewed, as is their role in symbiosis and genetic engineering. Protists, fungi, and bacteria are considered in relation to plants.

Prerequisites: Biology 101 and 102.
Mr. Ahmadjian/Offered every year

114 MARINE BIOLOGY/Lecture, Field Trips
This course is an introduction to the diversity and ecology of life in the oceans. Studies of basic physical oceanography and marine ecology precede studies of marine ecosystems such as salt marshes, kelp forests, rocky shores, plankton, and deep seas. Also included are the relationships of marine biology to the welfare of mankind. Prerequisites: Biology 101 and 102.
Mr. Johansen/Offered every year

118 GENETICS/Lecture, Discussion
A basic course in genetics covering Mendelian analyses; the molecular nature and function of the gene; gene and chromosome mutation; genetic mapping in eukaryotes and prokaryotes; and population genetics. Prior exposure to college-level chemistry is recommended. Prerequisites: Biology 101 and 102.
Mr. Lyerla/Offered every year

135 THE PARADOX OF ANIMAL SOCIALITY/Lecture, Discussion
Refer to course description under Psychology 135. Prerequisites: Biology 101 and 102.
Mr. Thompson/Offered every year

137 CELL BIOLOGY/Lecture, Laboratory
The cell as a structural and functional unit is studied Included are introductions to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin, and discussion of the roles of the nucleus, cytoplasm, and cell membranes in the regulation of cell metabolism. Prerequisites: Biology 101 and 102.
Mr. Curtis/Offered every year

140 NEUROSCIENCE I/Lecture, Laboratory, Discussion
The first of a two-course introduction to invertebrate and vertebrate nervous systems. Basic anatomy, physiology and chemistry, and the function of sensory and motor systems are covered. Emphasis is on classical and current research and on neuroscience as a complex of research problems requiring integrated anatomical, electrophysiological, chemical, and behavioral approaches. Guest lecturers include neuroscientists from the Biology, Chemistry, Physics, and Psychology Departments at Clark and from neighboring institutions. Prerequisites: Biology 101, 102, and Psychology 101.
Ms. Kennedy, Mr. Schoenfeld/Offered every year

141 NEUROSCIENCE II/Lecture, Discussion
The second of a two-course introduction to nervous systems. Surveys current problems in neuroscience including theories of brain function. Emphasis is on the underlying physiological mechanisms that mediate behavior, i.e. motivation, emotion, learning, and memory. The course is constructed on a systems approach designed to demonstrate the complex and interdependent relationship of the body and brain to behavior. Prerequisite: Biology 140.
Mr. Schoenfeld, Ms. Kennedy/Offered every year

170 NUTRITION AND METABOLISM/Lecture
Human health is studied from the perspective of the chemistry of biological regulatory

processes. The basic components of food are presented, and their biological function of maintaining human growth and vitality is studied. The role of food additives and cultural variations in diet in regard to pathology is discussed. Prerequisites: Biology 101, 102, Chemistry 101, and 102.
Mr. Brink/Offered every other year

183 LANGUAGE OF BIOLOGY/Lecture

Concerned with the study of Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and anatomy. The course also surveys the history of biology through its language: when certain concrete and abstract terms entered the language, who invented them, how their meanings may have changed, and possible alternate contemporary definitions. Prerequisites: Biology 101 and 102.
Mr. Blinderman/Offered periodically

195 PURSUIT OF INQUIRY/Lecture, Discussion

Refer to course description under Psychology 195. Prerequisites: Biology 101 and 102.
Mr. Thompson/Offered every year

200 LABORATORY IN ETHOLOGY

Refer to course description under Psychology 200. Prerequisites: Biology 101 and 102.
Mr. Thompson/Offered periodically

201 OCEAN ISLANDS: GEOLOGY AND ECOLOGY/Lecture, Field trip

A study of the biology and geology of islands, with special emphasis on Bermuda. The course includes lectures, projects, and a one-week field trip to the Bermuda Biological Station during the University fall or spring vacation. Prerequisites (or corequisites): Biology 101 and 102, and Geology 100 or Biology 110, Biology 114, Biology 116, Biology 216, or Biology 103/Geography 112. A laboratory fee of approximately $700 is required.
Mr. Herwitz, Mr. Johansen, Mr. Livdahl/Offered every year

204 WATERSHED ECOLOGY/Lecture, Discussion

Advanced seminar examining current scientific literature on the biogeochemistry of contrasting forested ecosystems. Topics include the inputs, outputs, and internal transfers of energy and nutrients in north temperate hardwood forests, tropical rainforests, cloud forests, eucalypt woodlands, and baldcypress swamps. The Hubbard Brook ecosystem study is considered in detail. Includes a field trip to the Hubbard Brook experimental watershed in the White Mountains. Prerequisites: Biology 101 and 102.
Mr. Herwitz/Offered every other year

211 SYMBIOSIS AND PARASITISM/Lecture, Discussion

Symbiotic and parasitic associations including animals, plants, protists, fungi, and bacteria are studied. The descriptive and functional aspects of each type of association are considered along with the experimental techniques that are used to study interrelationships between symbionts. Prerequisites: Biology 101 and 102.
Mr. Ahmadjian/Offered every other year

216 ECOLOGY/Lecture

Provides an overview of ecology as a scientific discipline. The primary emphasis is on

efforts to explain and predict the distribution and abundance of organisms, how ecological communities are composed, and why they vary in time and space. Prerequisites: one or more courses from the organismal biology group and one college-level math course.
Mr. Livdahl/Offered every year

220 POPULATION BIOLOGY/Lecture
Examines the properties that exist only at the population level, including schedules for birth and death, population growth patterns, spatial variation in abundance, genetic variation, and the factors that modify these features over time. Prerequisites: Biology 118 and 216 or permission of instructor.
Mr. Livdahl/Offered every other year

221 EMBRYOLOGY AND DEVELOPMENT/Lecture, Laboratory
Considers the fundamentals of development with primary emphasis on the vertebrate embryo. Prerequisites: Biology 101, 102, and permission of instructor.
Mr. Lyerla/Offered every other year

223 TOPICS IN MARINE BIOLOGY/Lecture, Seminar
This course provides an opportunity to delve in depth into selected topics in marine biology. Areas of study fall under the headings of biological oceanography, marine ecology, marine coastal and open ocean communities, and relationships between humans and the sea. Limited to 15 students. Prerequisite: Biology 114.
Mr. Johansen/Offered periodically

224 ENDOCRINOLOGY/Lecture
The chemistry and biological actions of hormones are discussed with emphasis on the mammalian endocrine system. Integration of studies of the ultrastructure and biochemistry of endocrine glands and their target tissues are a major focus of this course. Prerequisites: Biology 101 and 102.
Mr. Curtis/Offered every year

225 ELECTRON MICROSCOPY/Lecture, Laboratory
An introduction to the principles of electron optics, use of the electron microscope, preparation of specimens, and the techniques of electron microscopy applicable to biological investigation. Prerequisites: Biology 101, 102, and 137.
Mr. Curtis/Offered every year

226 RESEARCH IN PERCEPTION/Laboratory, Discussion
Refer to course description under Psychology 226. Prerequisites: Biology 101 and 102.
Ms. Wiser/Offered periodically

227 SOMATIC CELL GENETICS/Lecture, Laboratory
An introduction to cell culture methods through analyses of mouse X human somatic cell hybrids. Topics include: maintenance of senescent and immortal cell lines, cell culture media and their preparation, hybridization, cloning, and biochemical and chromosomal characterization of hybrid lines. Prerequisites: Biology 109, 118, and permission of instructor.
Mr. Lyerla/Offered periodically

228 MOLECULAR GENETICS/Lecture, Seminar

Explores recent discoveries in the molecular genetics of prokaryotes and eukaryotes, with emphasis on new findings from recombinant DNA technology and DNA sequencing. Topics include: protein synthesis, RNA transcription, gene regulation, repetitive DNA, gene cloning, split genes, gene families, transposable elements, oncogenes, and antibody gene rearrangement. Intended primarily for seniors and graduate students. Prerequisite: Biology 118 or 272, or permission of instructor.
Ms. Comer, Mr. Thurlow/Offered every other year

231 RECOMBINANT DNA/Lecture, Laboratory

An introduction to gene cloning techniques. Students clone *Escherichia coli* DNA in a plasmid vector; specific experiments include: DNA purification, restriction enzyme digestion, agarose gel electrophoresis, DNA ligation, bacterial transformation, genetic characterization of recombinants, restriction mapping, and DNA sequencing. Two laboratory periods per week. Prerequisites: Biology 118 in addition to Biology 109 or 271.
Ms. Comer/Offered every other year

232 TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/Lecture, Discussion

Theme and content vary. Offered for graduate students and for undergraduates who have completed a course in microbiology and one or more years of college-level chemistry. Prerequisites: Biology 109, Chemistry 102, and permission of instructor.
Mr. Reynolds/Offered periodically

240 PHYSIOLOGY/Lecture, Laboratory

An introduction to the principles underlying physiological functions common to all living animals. Covers the subcellular, cellular, and organ levels of organization and places a primary emphasis on the integrative processes whereby all of the diverse organs and systems are oriented to the performance of the complete organism. Prerequisites: Biology 137. Enrollment is normally restricted to students in their third or fourth year.
Ms. Kennedy/Offered every year

241 RISK ASSESSMENT IN ENVIRONMENTAL TOXICOLOGY/Lecture

Focus is on the assessment of hazardous properties of toxic chemicals in the environment and development of public health policy. The first part covers the principles of absorption, distribution, excretion, and toxic action of chemicals on humans; animal testing; and human epidemiology. The second part covers assessment of public health risks on the basis of animal and human test results, development of standards for air and water contaminants, and uncertainty in regulating hazardous chemicals. Prerequisites: Biology 101, 102, and permission of instructor.
Ms. Brown/Offered every year

247 NEUROPHYSIOLOGY/Seminar

Discussion of selected readings from classical and current research papers and books on principles and mechanisms of neuronal function. Emphasis is on understanding and critically evaluating research that has been done, understanding the significance of the work in a particular reading to the field as a whole, and recognizing appropriate directions for future research in each problem area. Prerequisites: Biology 140 or 240.
Ms. Kennedy/Offered every other year

252 SEMINAR IN MYCOLOGY

A detailed, but broad, treatment of fungi with discussion of the major groups of fungi. Topics covered include classification genetics, nutrition, biochemistry, molecular biology, secondary products, symbiosis, and ecology of fungi. Prerequisite: permission of instructor.
Mr. Ahmadjian/Offered periodically

260 DIRECTED RESEARCH/Laboratory

An advanced independent study for undergraduates of an approved topic under the direction of a department member. Prerequisite: permission of instructor.
Staff/Offered every year

261 DIRECTED READINGS/Discussion

Advanced readings on an approved topic under the direction of a department member. Prerequisite: permission of instructor.
Staff/Offered every year

262 HONORS IN BIOLOGY

Readings and research for students in the honors program. Pass/no record only.
Staff/Offered every year

271 BIOCHEMISTRY I/Lecture, Laboratory
272 BIOCHEMISTRY II/Lecture

This two-semester course provides a comprehensive and up-to-date survey of the field of biochemistry. The first semester covers cell metabolism and protein structure and function; the second semester deals with nucleic acid and protein metabolism and other topics. A laboratory component for the first semester acquaints students with methods and instrumentation used in biochemical research. Prerequisites: Biology 101, 102, and Chemistry 132.
Mr. Brink, Ms. Comer, Mr. Nelson, Mr. Thurlow/Offered every year

273 NEUROCHEMISTRY/Lecture

Metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes, pain, and emotion are discussed in terms of biochemical mechanisms. Prerequisites: Biology 101 and 102, and Chemistry 132 or permission of instructor, or Biology 141.
Mr. Brink/Offered every other year

274 DEVELOPMENTAL PSYCHOBIOLOGY/Seminar

The biological foundations and correlates of behavioral development are discussed, with emphasis on the perinatal period. Examples are drawn primarily from the animal literature (rodents, birds, infrahuman primates), treating psychobiological development from an ethological and ecological perspective. The neurological and physiological antecedents of human development are discussed where feasible, particularly with reference to developmental disorders. Topics include: neural and hormonal development, plasticity of visual and olfactory development, early learning and memory, development of bird song, parental behavior, early stress, developmental antecedents of sexual and sexually-dimorphic behaviors, psychobiological aspects of autism and ADD. Open to advanced undergraduate and graduate students.
Mr. Schoenfeld/Offered every third year

277 BIOCHEMISTRY OF DISEASE/Lecture, Discussion
The course considers biochemical systems that are perturbed in metabolic regulatory processes as in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components are also addressed. Prerequisites: Biology 101 and 102, and Chemistry 132 or permission of instructor.
Mr. Brink/Offered every other year

278 PHARMACOLOGY
This course is for students who wish to know more about the biological actions of therapeutic drugs on various tissues and organisms. Among the agents surveyed are those that affect the brain, kidney, pathogenic organisms, and oncologic processes. The detailed actions of several important drugs such as penicillin are analyzed for specific pharmacological effects and general biotic effects in the environment.
Mr. Brink/Offered every other year

280 BIOSTATISTICS AND COMPUTER APPLICATIONS/Lecture
Provides a background in the basic methods of data analysis for biologists, applications of mathematics to the description of biological phenomena, and the generation of testable hypotheses from models of biological processes. Prerequisites: one or more biology courses beyond Biology 101 and 102.
Mr. Livdahl/Offered every year

281 ANIMAL SOCIAL LIFE/Seminar
Refer to course description under Psychology 281. Prerequisite: permission.
Mr. Thompson/Offered every year

293 MOLECULAR NEUROPHARMACOLOGY/Lecture, Discussion
This course is designed to provide students with the basic knowledge of the action of drugs that influence the nervous system. The molecular, psychological, and behavioral effects of the different classes of drugs such as opiates, stimulants, and tranquilizers are presented. Topics include: receptor binding kinetics and mechanisms; drug absorption, distribution, and metabolism; molecular biology and cloning of receptors; and general pharmacological principles underlying the design and site-specific action of drugs. Prerequisite: Biology 141 or permission of the instructor. (Enrollment is limited.)
Mr. Brink/Offered every other year

294 NEUROANATOMY AND BEHAVIOR/Lecture, Seminar
A systematic exploration of the organization and function of the human nervous system. Topics include: relationships of cortical and subcortical structures of the brain with the spinal cord and peripheral nerves, and the organization of higher brain circuits, which form the anatomical bases of movement, perception, emotion, memory, and thought. Clinical examples bridge neuroanatomy with the neurological and neuropsychological disciplines. Prerequisite: Biology 141 or permission of the instructor.
Mr. Schoenfeld/Offered periodically

295 NEUROENDOCRINE MECHANISMS OF BEHAVIOR/Lecture, Seminar
A comprehensive examination of how neuroendocrine systems influence mammalian behavior. Initially, anatomical and physiological bases for interaction of the nervous

and endocrine systems and the various classes of chemical signaling and major neuroendocrine pathways are reviewed. Neuroendocrine control of behaviors such as feeding, drinking, reproduction, and learning then are discussed with emphasis on how different classes of neuroendocrine signals individually and interactively influence specific behaviors. Application of new approaches to the study of the neuroendocrinology of behavior is included. Prerequisite: Biology 141 or permission of instructor.
Staff/Offered every year

300 READINGS AND RESEARCH IN BIOLOGY
Offered for variable credit.
Staff/Offered every year

311 GRADUATE RESEARCH SYMPOSIUM
Graduate students organize and present a public symposium composed of individual research presentations. This course may be repeated for credit.
Mr. Livdahl/Offered every year

352 GRADUATE SEMINAR IN MYCOLOGY
A detailed but broad treatment of fungi with discussion of the major groups of fungi. Topics covered include: classification, genetics, nutrition, biochemistry, molecular biology, secondary products, symbiosis, and ecology of fungi. Prerequisite: permission of instructor.
Mr. Ahmadjian/Offered periodically

353 GRADUATE SEMINAR IN MOLECULAR BACTERIOLOGY/Seminar
Recent papers on the molecular biology of bacteria are discussed, with occasional digressions into eukaryotes. The emphasis is on the molecular mechanisms of life, especially gene expression and regulation. Students also report on their own research results. Primarily for graduate students doing research in this area; may be repeated for credit. Prerequisite: permission of instructor.
Ms. Comer/Offered every year

360 MASTER'S THESIS
Offered for variable credit.
Staff/Offered every year

390 DOCTORAL DISSERTATION
Offered for variable credit.
Staff/Offered every year

Business/Management

See Management.

Chemistry

(The Gustaf H. Carlson School of Chemistry)

DEPARTMENT FACULTY

Frederick T. Greenaway, Ph.D., *chair*: bioinorganic, enzymology
Daeg S. Brenner, Ph.D.: nuclear
Karen L. Erickson, Ph.D.: organic, natural products
Alan A. Jones, Ph.D.: polymer, physical
Stuart L. Licht, Ph.D.: physical, environmental
Donald J. Nelson, Ph.D.: biochemistry, bioinorganic
David L. Thurlow, Ph.D.: molecular biology
Edward N. Trachtenberg, Ph.D.: organic
Mark M. Turnbull, Ph.D.: organometallic, magnetochemistry
Wen-Yang Wen, Ph.D.: physical, gas-polymer interactions

RESEARCH FACULTY

Paul T. Inglefield, Ph.D.

AFFILIATE FACULTY

Mauri A. Ditzler, Ph.D.
Larry W. Hardy, Ph.D.
David Kupfer, Ph.D.
George E. Wright, Ph.D.

ADJUNCT FACULTY

John J. Brink, Ph.D.
Halina S. Brown, Ph.D.
M. Margaret Comer, Ph.D.
Christopher P. Landee, Ph.D.

EMERITUS

Harry C. Allen Jr., Ph.D.: inorganic, physical

UNDERGRADUATE PROGRAM

The Chemistry Department offers an undergraduate program that includes a major, with the following goals in mind:

1. to provide a variety of course offerings that are consistent with the accreditation requirements of the American Chemical Society;
2. to offer a program that will prepare students for graduate work in chemistry and related fields;
3. to provide a strong scientific background for students planning careers in health-related professions;
4. to encourage students not majoring in science to obtain an overview of the impact of science on society.

The requirements for the chemistry major are two courses in calculus (Math 120 and 121, or 124 and 125), two courses in physics (Physics 110, and 111 or preferably 112), and eleven courses in chemistry and related fields. These courses must include:

Course	**Number**
Introductory Chemistry I	*101*
Introductory Chemistry II	*102*
Organic Chemistry I	*131*
Organic Chemistry II	*132*
Environmental Chemistry or	*142*
Bioanalytical Chemistry	*144*
Instrumental Analysis	*246*
Inorganic Chemistry	*250*
Physical Chemistry I	*260*
Physical Chemistry II or	*262*
Biophysical Chemistry	*264*

The remaining two-course requirement is normally satisfied by advanced chemistry courses, one of which may be Chemistry 299.5, *Special Projects*, or Chemistry 299.8, *Honors*. On rare occasions, with permission from the department, the student may substitute an advanced-level course in biochemistry, computer science, mathematics, physics, or biology.

Students planning graduate study in chemistry are strongly urged to take Physics 112 rather than Physics 111. In addition to the stated requirements, it is recommended that students take Chemistry 360, 231, and/or advanced mathematics, physics, and biochemistry courses, depending on the area of interest. Computer science courses also are recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 299.8) or in a special projects course (Chemistry 299.5) and may do so after completing Chemistry 132.

A student may elect as his/her first course in chemistry: Chemistry 10, 11, 70, 90, 101, 102, or 131. Science majors normally begin with Chemistry 101. The decision to start with Chemistry 102 or 131 (accelerating options) must be made in consultation with the department chair and may require taking a placement examination offered at the beginning of the academic year.

Students who fulfill the normal requirements will have their degrees accredited by the American Chemical Society.

The department publishes an undergraduate handbook, *Chemistry at Clark*, which provides additional information. Copies are available at the department office.

HONORS PROGRAM

An honors degree program is offered for highly qualified majors. Students who want to enter this program must apply in writing to the department chair prior to the beginning of the senior year. Participants are required to engage in an independent research project, participate in the department seminar program, and pass a set of comprehensive examinations. Further information about the program can be obtained from the department chair or the undergraduate handbook.

GRADUATE PROGRAM

The department offers programs leading to the degrees of master of arts and doctor of philosophy with specialization in various fields of chemistry. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and, together with the student, defines the formal coursework requirements. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal coursework, all students must pass qualifying examinations and submit and defend a research thesis. Ph.D. candidates must pass preliminary examinations and meet the department language requirement as well. For further details, students should consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, and research fellowships are available. Further information on these awards may be obtained from the department chair.

COURSES

010 TOPICS IN CONTEMPORARY CHEMISTRY/Lecture

This relatively nonmathematical course is designed for students majoring in social science or the humanities and is intended to develop a qualitative feeling about chemistry as it relates to the modern world. Approximately half the course is concerned with the development of modern chemical concepts; the remainder deals with current societal problems such as nuclear weapons and reactors, air and water quality, drugs, food additives, polymers, poisons, and others. In-class and final exams.
Staff/Offered every year

090 HISTORY OF SCIENCE/Lecture

Traces the development of scientific thought, concepts, and methods from the classical work (Egyptian, Greek, Roman), through the Middle Ages and the European Renaissance to the modern work. Historical milestones leading to the development of the "scientific method" are discussed in detail. The course concludes with an examination of the impact of chemical technology on modern society. In-class and final exams.
Mr. Nelson/Offered every year

101 INTRODUCTORY CHEMISTRY I/Lecture, Laboratory

Designed to meet the needs of science majors and the premed program as well as those seeking a rigorous introduction to chemistry as part of their liberal arts education. Introduces fundamental chemical concepts and applies them to a discussion of structure, bonding, and reactivity of molecules. A knowledge of high school algebra is necessary; high school chemistry and physics, although helpful, are not required. The laboratory teaches techniques of chemical experimentation and methods of chemical analysis. In-class and final exams, laboratory reports, and quizzes.
Staff/Offered every semester

102 INTRODUCTORY CHEMISTRY II/Lecture, Laboratory

Continues Chemistry 101 with a discussion of thermodynamics, equilibrium theory, kinetics, electrochemistry, and the application of such theories to studies of structure and reactivity of molecules. The laboratory studies experimental techniques related to the lecture material. Prerequisite: Chemistry 101 or advanced placement. In-class and final exams, laboratory reports, and quizzes.
Staff/Offered every semester

131 ORGANIC CHEMISTRY I/Lecture, Laboratory

Discusses the chemistry of carbon and its compounds. The structures and reactions of related classes of organic molecules are systematically studied with emphasis on

reaction mechanisms and structural factors that affect reactivity. The laboratory concentrates on the preparation and physical, spectral, and chemical properties of these classes of compounds. Prerequisite: Chemistry 102 or advanced placement. In-class and final exams, laboratory reports.
Staff/Offered every semester

132 ORGANIC CHEMISTRY II/Lecture, Laboratory

Continues Chemistry 131 by studying more complex molecules and reaction mechanisms. Prerequisite: Chemistry 131. In-class and final exams, laboratory reports.
Staff/Offered every semester

142 ENVIRONMENTAL CHEMISTRY/Lecture, Laboratory

Focuses on chemistry related to environmental problems, with emphasis on aquatic chemistry and aquatic and air pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 102. In-class and final exams, laboratory reports.
Mr. Licht/Offered every year

144 BIOANALYTICAL CHEMISTRY/Lecture, Laboratory

This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics include: equilibrium theory, chromatography, electrophoresis, immunochemistry, ultracentrifugation, absorption and fluorescence, NMR, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 132. In-class and final exams, laboratory reports.
Mr. Nelson/Offered every other year

230 PHYSICAL ORGANIC CHEMISTRY/Lecture

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics, and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 132 and 260, or permission of instructor.
Mr. Trachtenberg/Offered every other year

231 ADVANCED ORGANIC CHEMISTRY/Lecture

Provides a framework for students who wish to pursue an interest in organic chemistry beyond the level covered in Chemistry 131 and 132 by bridging the gap between material in standard elementary organic texts and the original literature. Advanced topics selected from structure, synthesis, and reaction mechanisms may include stereochemistry and asymmetric synthesis; ionic, free radical, carbenoid, and concerted reaction mechanisms; structure determination by modern spectroscopic and degradative methods. Prerequisite: Chemistry 132.
Staff/Offered every year

233 ORGANIC CHEMISTRY OF BIOMOLECULES/Lecture

Emphasizes the synthesis, proof of structures, reactions, and reaction mechanisms of important classes of molecules playing significant biological roles. Topics include the carbohydrates, fats, proteins, and cyclic ureides, including the pyrimidines and purines of importance in drugs and nucleic acids. Other selected molecules from the steroids, alkaloids, and terpenoids also are discussed briefly. Prerequisite: Chemistry 132.
Mr. Trachtenberg/Offered every other year

235 NATURAL PRODUCTS/Lecture, Optional Laboratory

The structure, synthesis, biosynthesis, and chemistry of selected secondary metabolites including steroids, terpenoids, alkaloids, and actogenins of both terrestrial and marine origin are discussed. Biogenetic theory is used extensively to emphasize the simplicity within the complexity of these natural products. An optional four-hour laboratory per week also is available for extra credit. Prerequisite: Chemistry 132.
Ms. Erickson/Offered every other year

236 ORGANOMETALLIC CHEMISTRY/Lecture

This course covers material related to compounds containing one or more covalent metal-carbon bonds. The material progresses from the traditional organometallics such as Grignards and cuprates through the transition metal- and main group-complexes. Emphasis is placed on the properties of organometallic compounds and mechanisms of their formation and subsequent reactions. Because of the recent development of the field, use of the primary literature is stressed. A comparison of traditional organic and inorganic chemistry is developed through this intermediate field. Prerequisites: Chemistry 132, 250, or permission of instructor. In-class and final exams, library work, in-class presentations.
Mr. Turnbull/Offered every other year

242 NUCLEAR SCIENCE/Lecture, Laboratory

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification, structure, and measurement of radioactive atoms. Prerequisite: permission of instructor.
Mr. Brenner/Offered periodically

246 INSTRUMENTAL ANALYSIS/Lecture, Laboratory

Concentrates on instrumental techniques of analytical chemistry from both theoretical and practical points of view. Topics include electrochemistry, various types of spectroscopic analysis, chromatography, and electrophoresis. In the laboratory, these techniques are used in the analysis of chemical samples. Prerequisite: Chemistry 142 or 144. In-class and final exams, laboratory reports.
Mr. Licht/Offered every year

250 INORGANIC CHEMISTRY/Lecture, Laboratory

Deals with theories of structure and bonding and their utility in explaining the chemistry of inorganic substances. Topics include: molecular orbital, valence bond, and crystal field theories of bonding and examples of the use of these theories in explaining the structure and reactivities of inorganic molecules; acid base theory; spectroscopic methods; and kinetics. Emphasis is placed on the interpretation of structure and reactivity in terms of basic molecular and atomic parameters. Prerequisite: Chemistry 142 or 144. Prerequisite or corequisite: Chemistry 132. In-class and final exams, laboratory reports.
Mr. Greenaway/Offered every year

252 BIOINORGANIC CHEMISTRY/Lecture

This course discusses the chemistry of metals in biological systems and models of these systems. There is a lengthy introduction to general principles and theories of inorganic chemistry and of metal ion and drug transport in biological systems. This is followed by an introduction to physical techniques used in studying metalloproteins. The major part of the course is a survey of the application of these principles and methods by

way of a survey of metallobiological systems. Prerequisite: permission of instructor.
Mr. Greenaway/Offered every other year

260 PHYSICAL CHEMISTRY/Lecture, Laboratory
Covers the principles of physical chemistry as applied to gases, liquids, solids, and solutions. Much of the course is an introduction to the topic of chemical thermodynamics. The laboratory includes experiments in physical chemistry, the development of techniques of measurement, and technical report writing. Prerequisites: Mathematics 120 and Chemistry 102. Prerequisites or corequisites: Chemistry 132. In-class and final exams, laboratory reports.
Mr. Wen/Offered every year

262 PHYSICAL CHEMISTRY II/Lecture, Laboratory
The topics covered in this continued discussion of physical chemistry are solutions of the Schrodinger equation for simple systems, atomic and molecular spectroscopy, magnetic resonance, solid state and X-ray diffraction, statistical thermodynamics, and chemical kinetics. In-class and final exams, laboratory reports. Prerequisite: Chemistry 260.
Mr. Wen/Offered every year

264 BIOPHYSICAL CHEMISTRY/Lecture, Laboratory
Refer to course description under Biochemistry 264.
Mr. Nelson/Offered every other year

265 ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY/Lecture
This course is designed as an introduction to the theory and application of EPR as a probe of structure and reactivity. Theoretical concepts are discussed in a manner that does not require a knowledge of quantum mechanics, although a basic knowledge of chemistry is required. The course also is designed to be suitable for biology and physics majors. Prerequisite: permission of instructor.
Mr. Greenaway/Offered periodically

271 BIOCHEMISTRY I/Lecture, Laboratory
272 BIOCHEMISTRY II/Lecture
Refer to course descriptions under Biochemistry 271 and 272.
Staff/Offered every year

275 PROTEIN CHEMISTRY/Lecture
Refer to course description under Biochemistry 275.
Mr. Nelson/Offered every other year

276 STRUCTURE AND FUNCTION OF NUCLEIC ACIDS/Lecture
This course discusses principles of nucleic acid structure including: types of helices, primary structure, secondary structure, and supercoiling. In the second half of the course, students discuss papers relating the principles of structure to a particular function such as storage, expression of information, catalysis, and evolution of the genetic code. Prerequisite: Chemistry 272.
Mr. Thurlow/Offered every other year

280 POLYMER SCIENCE/Lecture
The physical chemistry of synthetic polymers is presented including discussion of

kinetic mechanisms of polymerization, molecular weight distributions, unperturbed dimensions, structure and conformation, viscosity, and dynamic properties. Specific experimental methods useful in polymer chemistry such as osmotic pressure, light scattering, gel permeation chromatography, viscoelastic response, nuclear magnetic resonance, and dielectric response also are reviewed. Prerequisite: Chemistry 262 or 264.
Mr. Jones/Offered every other year

290 RESEARCH METHODS/Lecture, Laboratory
This course deals with the application of analytical tools widely used in the laboratory. Topics include NMR, EPR, IR, Raman, UV- visible, mass, and fluorescence spectroscopy, chromatography, electrophoresis, electrochemistry, and other techniques. Emphasis is placed on giving the student practical knowledge for data interpretation and instrument operation. Quarter-credit courses lasting 4-5 weeks are offered periodically. Prerequisite: Chemistry 262 or 264, or permission.
Staff/Different topics offered every semester.

299.5 SPECIAL PROJECTS/Laboratory, Discussion
Individual investigations that involve laboratory and/or literature research. Offered for variable credit. Prerequisite: permission.
Staff/Offered every semester

299.8 HONORS COURSE/Laboratory, Discussion
Primarily for majors seeking departmental honors in chemistry. Involves a laboratory research project and participation in department seminars. Offered for variable credit. Prerequisite: Permission of department chair.
Staff/Offered every semester

300 RESEARCH/Laboratory
Offered for variable credit.
Staff/Offered every semester

322 THERMODYNAMICS/Lecture
Discusses applications of the three laws of thermodynamics to chemical systems.
Mr. Wen/Offered periodically

323 STATISTICAL MECHANICS/Lecture
In this course, statistical mechanics is treated as a connecting bridge between molecular properties and thermodynamics. In addition, theories of phase transitions, classical fluids, and non-equilibrium systems are presented and discussed.
Mr. Wen/Offered every other year

333 SYNTHETIC ORGANIC CHEMISTRY/Lecture
The synthesis of organic compounds is discussed. Topics include the scope and limitations of general methods, mechanistic aspects, and stereochemistry. Special emphasis is on the total synthesis of complex molecules from design of methods to execution. Three lectures per week. Prerequisite: Chemistry 231 or permission.
Mr. Turnbull/Offered periodically

350 SEMINAR
Consists of reports on research and discussions of recently published work.
Guest Lecturers, Staff, Graduate Students/Not offered for credit

360 QUANTUM CHEMISTRY/Lecture
Essentially an introduction to quantum mechanics. Covers elementary quantum-mechanical treatments of the structure of atoms and molecules. Prerequisite: Chemistry 262 or 264.
Mr. Brenner/Offered every other year

361 MAGNETIC RESONANCE THEORY/Lecture
The theory of static and time dependent interactions involved in magnetic resonance spectroscopy is presented. Energy states are defined on the basis of the time independent Hamiltonian and reflect symmetry. The time dependent terms in the Hamiltonian are used to develop descriptions for line shape collapse and relaxation.
Mr. Jones/Offered every other year

379 SPECIAL TOPICS/Seminar
Consists of research and literature reports by graduate students and undergraduate honors candidates.
Staff/Offered every semester

380 RESEARCH CONFERENCE/Seminar
Consists of informal reports of research work being done in the laboratory.
Staff, Graduate Students/Offered every semester/Not offered for credit

Classics

PARTICIPATING FACULTY

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology, ancient history

Everett Fox, Ph.D.: Jewish ritual and folklore, classical Jewish thought

William A. Koelsch, Ph.D.: themes in classical geographic thought

Rhys F. Townsend, Ph.D.: ancient Greek art and architecture, underwater archaeology, classical tradition in Western art, early Christian and Byzantine art

The Classics Program offers courses in the Classical Greek and Latin languages and, in English, the culture and history of the Greek- and Latin-speaking peoples of the ancient Mediterranean. Classics courses are recommended to students as part of their general education and to majors in comparative literature, English, foreign languages and literatures, fine arts, history, music, and philosophy. Although there is no departmental major in classics, students interested in pursuing the study of the ancient

Greco-Roman and Judaeo-Christian roots of Western civilization are directed to the interdisciplinary and interdepartmental Program in Ancient Civilization.

COURSES

A. GREEK

101/102 INTRODUCTORY GREEK/Lecture, Discussion
A beginner's course in the language of Classical Greece. The course covers the grammar and syntax of the ancient Greek language with the goal of enabling students to read, in the second semester, selections from ancient Greek texts. Course readings, in Greek, may include philosophical works such as Plato's *Apology of Socrates* and *Crito*, or selections from Homer, Herodotus, and the New Testament, depending on class interests. Indivisible course.
Mr. Burke/Offered every year

B. LATIN

101/102 INTRODUCTORY LATIN/Lecture, Discussion
A beginner's course in the Latin language including, in the first semester, an introduction to the grammar and syntax of Latin with appropriate attention to Latin's role as parent to the Romance languages and source of much of the vocabulary of modern English. The second semester is primarily devoted to reading selections from suitable Latin texts such as the lyric poetry of Catullus or Horace, the historical works of Julius Caesar or Livy, the Vulgate Bible, or selected medieval texts. Indivisible course.
Staff/Offered every year

C. CLASSICS COURSES TAUGHT IN ENGLISH

005 ROMANS AND BARBARIANS/Lecture, Discussion, Field Trips
A comprehensive survey of the introduction of urbanism to Europe north of the Alps by the Romans, and of the transforming effects of this act upon the society, politics, language, and religion of Western Europe. The course is offered at the Clark European Center in Luxembourg; to the maximum extent possible, instruction takes place on the archaeological sites covered by the course. Student journals take the place of formal examinations.
Mr. Burke/Offered every other year

110 ANCIENT GREEK ART/Lecture, Discussion
Refer to course description under Art History 110.
Mr. Townsend/Offered every other year

115 THE TEMPLE BUILDERS: ARCHITECTURE IN ANCIENT GREECE/Lecture, Discussion
Refer to course description under Art History 215.
Mr. Townsend/Offered periodically

123 THE MIDRASHIC TRADITION/Lecture, Discussion
Refer to course description under Hebrew 123.
Mr. Fox/Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY/Lecture, Discussion
A study of ancient Near Eastern, Greek, and Roman literary texts (along with some modern ones), which are particularly useful for gaining an understanding of the function of myth in Greco-Roman antiquity as a vehicle for artistic communication and social commentary. The archaeological and anthropological background of the ancient world is sketched in, and the religious and philosophical implications of myth are discussed. The course pays particular attention to the influence of ancient mythology on later European culture, especially literature and art. Various modern approaches to myth analysis (structural, psychoanalytical, and literary) are touched upon. Many of the lectures are illustrated by slides.
Mr. Burke/Offered every other year

135 CLASSICAL GREEK TRAGEDY/Lecture, Discussion
A survey of tragic drama in classical Greece. The course treats the distinctive role of drama in ancient Greek society, staging and production of classical tragedy, and problems of interpreting the texts of plays (in translation) by Aeschylus, Sophocles, and Euripides. The course also pays appropriate attention to mythology as the primary subject of Greek tragedy. One mid-term, one term paper, final examination.
Mr. Burke/Offered every other year

157 THE AGE OF NERO/Lecture, Discussion
A close study of the first century of Roman Imperial society with particular attention to the reign of the emperor Nero (A.D. 54-68). The course emphasizes the historical and social results of the consolidation, during the first century A.D., to totalitarian rule in Rome, a form of government that would dominate the Mediterranean world and most of Europe for four centuries. The age of Nero was also a period of almost unprecedented creativity in the arts; therefore, students also learn–through the study of Neronian art, architecture, and literature–about the development of a distinctive Imperial idiom in these fields.
Mr. Burke/Offered every other year

174 GREEKS AND BARBARIANS IN THE ANCIENT ECUMENE/Lecture, Discussion
Refer to course description under Geography 174.
Mr. Koelsch/Offered every year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD/Lecture, Discussion
A historical and cultural survey of the period between the foundation of the Roman Empire and the sixth century A.D., when medieval culture was established in Europe. Two themes dominate the course: (1) the struggle between pagan or classical modes of thought and Judaeo-Christian beliefs and values, and the assimilation of each in the other; (2) the tension within the Christian movement between spiritual and practical concerns as the new religion came to dominate Western culture. The interaction of Greco-Roman, Jewish, and Christian cultures is approached by reading ancient authors in translation, by studying appropriate secondary sources, and by examining representative samples of the visual arts of the period in lectures illustrated by slides.
Mr. Burke/Offered every other year

283 NATURE AND CULTURE IN THE ANCIENT WORLD/Discussion
Refer to course description under Geography 283.
Mr. Koelsch/Offered every other year

Communication Studies

PRINCIPAL ADVISORS

Michael Bamberg, Ph.D., Psychology: first and second language acquisition, narratives, discourse analysis, cross-linguistic/cross-cultural comparison

Charles S. Blinderman, Ph.D., English: science and literature, Victorian literature, etymology

Sarah Buie, M.F.A., Visual and Performing Arts: graphic design, museum design and interpretation

Marcia Butzel, Ph.D., Foreign Languages and Literatures: French and Italian, cultural studies, French narrative

John J. Conron, Ph.D., English: American literature, American landscape, American culture, fine arts

Fern Johnson, Ph.D., *provost:* sociolinguistics, feminist linguistics, communication

James V. Wertsch, Ph.D., Psychology: sociocultural approaches to mind, language, and thought; socialization of cognition and values; cultural identity in the context of globalization

Paul Wilkes, M.S., English: print media, documentary film

Communication Studies at Clark University is an interdisciplinary program through which students can take courses and complete a concentration to complement a major in another field of study. Communication courses are offered in a number of departments and are often cross-listed to reflect the interdisciplinary focus of the program.

The study of communication focuses on analysis and understanding of symbols. Communication is viewed as a fundamental form of social action, centered in the human ability to create and understand verbal and visual symbols. Courses are available which treat a range of communication contexts, from personal and private to mediated and public.

The communication studies concentration is available in three different emphasis areas and requires the completion of six courses (including the core course) plus a directed project or an approved internship. An interdisciplinary faculty committee guides the work of students. The three emphasis areas and faculty advisors in each are:

- Writing – Professors Blinderman, Conron, and Wilkes
- Visual Communication – Professors Butzel and Buie
- Language, Communication, and Identity – Professors Bamberg, Johnson, and Wertsch

REQUIREMENTS

All students fulfilling the communication studies concentration complete:

1. Communication 190, *Communication, Culture and Society* and 299.9, *Internship or Special Project*
2. Sample courses in emphasis areas.

COURSES

190 COMMUNICATION, CULTURE, AND SOCIETY

A core course rather than a survey or introduction, this course focuses on concepts and ideas from several disciplines that contribute to (or criticize) the intellectual foundations of the communication field. Philosophical and humanities-oriented in approach, the course may include readings by Barthes, Dewey, Lippman, Saussure, and Sontag. Prerequisite: Enrolled students must have taken or be taking concurrently at least one other communication concentration course. Permission of the instructor is required.
Staff/Offered every year

299.9 INTERNSHIP OR SPECIAL PROJECT

Staff/Offered every year

COURSES RELEVANT TO THE COMMUNICATION STUDIES CONCENTRATION

A. WRITING EMPHASIS

Courses in the study of language and communication:

191 LANGUAGE DIVERSITY IN THE UNITED STATES

Refer to course description under English 191.
Ms. Johnson/Offered every year

192 ETYMOLOGY

Refer to course description under English 192.
Mr. Blinderman/Offered every year

193 THE LANGUAGE OF BIOLOGY

Refer to course description under English 193.
Mr. Blinderman/Offered every year

194 LANGUAGE, EMOTIONS, THOUGHT, AND CULTURE

Refer to course description under Psychology 160.
Mr. Bamberg, Ms. Budwig/Offered periodically

242 PSYCHOLOGY OF LANGUAGE

Refer to course description under Psychology 242.
Mr. Kaplan/Offered periodically

249 SIGNS AND CROSSROADS: SEMIOTIC THEORY AND PRACTICE

Refer to course description under English 249.
Ms. Gertz/Offered periodically

251 MEDIA AND SOCIETY

Refer to course description under Sociology 251.
Staff/Offered periodically

283 PHILOSOPHY OF LANGUAGE

Refer to course description under Philosophy 242.
Ms. Herzog/Offered periodically

294 THE HISTORY OF THE ENGLISH LANGUAGE
Refer to course description under English 294.
Ms. Gertz/Offered periodically

Courses in writing:

019 THE ESSAY: READING AND WRITING
Refer to course description under English 019.
Ms. Scanlon/Offered every year

103 LITERARY RESEARCH AND WRITING
Refer to course description under English 103.
Ms. Gertz/Offered every year

106 CREATIVE WRITING: FICTION
Refer to course description under English 106.
Staff/Offered every year

107 CREATIVE WRITING: POETRY
Refer to course description under English 107
Staff/Offered every year

109 SCIENCE AND SOCIETY WRITING SEMINAR
Refer to course description under Environment, Technology, and Society 109.
Mr. Goble/Offered periodically

195 DOCUMENTARY FILM
Refer to course description under English 195.
Mr. Wilkes/Offered ever year

199 THE WRITER'S CRAFT
Refer to course description under Theater Arts 199.
Mr. Brooks/Offered every other year

202 WRITING FOR MAGAZINES I
Refer to course description under English 202.
Mr. Wilkes/Offered every year

203 WRITING FOR MAGAZINES II
Refer to course description under English 203.
Mr. Wilkes/Offered every year

B. VISUAL COMMUNICATION EMPHASIS

Courses in film and television:

101 INTRODUCTION TO SCREEN STUDIES
Refer to course description under Screen Studies 101.
Mr. Benelli/Offered every semester

120 HISTORY OF AMERICAN NARRATIVE FILM
Refer to course description under Screen Studies 120.
Mr. Benelli/Offered every other year

122 HISTORY OF BROADCASTING AND TELEVISION
Refer to course description under Screen Studies 122.
Mr. Benelli/Offered every other year

123 FACTUAL FILM AND TELEVISION
Refer to course description under Screen Studies 123.
Mr. Benelli/Offered every other year

184 FILM AS NARRATION
Refer to course description under Screen Studies 184.
Ms. Butzel/Offered every other year

191 STUDIES IN COMPARATIVE CULTURE: FRENCH VS. AMERICAN TELEVISION
Refer to course description under Comparative Literature 191.
Ms. Butzel/Offered ever year

195 DOCUMENTARY FILM
Refer to course description under English 195
Mr. Wilkes/Offered every year

231 FILM THEORY
Refer to course description under Screen Studies 231.
Mr. Benelli/Offered every year

251 MEDIA AND SOCIETY
Refer to course description under Sociology 251.
Staff/Offered periodically

299 GENDER AND FILM
Refer to course description under Screen Studies 299.
Ms. Butzel/Offered every other year

Courses in graphic design and photography:

100 VISUAL STUDIES—DESIGN
Refer to course description under Studio Art 100.
Mr. Krueger, Mr. Hachey/Offered every year

120 INTRODUCTION TO PHOTOGRAPHY: ZONE SYSTEM
Refer to course description under Studio Art 120.
Mr. Rosenstock, Mr. DiRado/Offered every semester

121 INTERMEDIATE PHOTOGRAPHY
Refer to course description under Studio Art 121.
Mr. Rosenstock, Mr. DiRado/Offered every year

124 INTRODUCTION TO GRAPIC DESIGN
Refer to course description under Studio Art 124.
Ms. Buie/Offered every year

125 GRAPHIC DESIGN PROJECTS
Refer to course description under Studio Art 125.
Ms. Buie, Ms. Bodenweber/Offered every year

171 VIDEO PRODUCTION PROJECTS
Refer to course description under Studio Art 171
Mr. Simon/Offered every year

200 PHOTOGRAPHY PROJECTS
Refer to course description under Studio Art 200.
Mr. Rosenstock, Mr. DiRado/Offered every year

208 TYPOGRAPHY
Refer to course description under Studio Art 208.
Ms. Buie/Offered every year.

252 PHOTOGRAPHY STUDIO
Refer to course description under Studio Art 250.
Staff/Offered every year

254 GRAPHIC DESIGN STUDIO
Refer to course description under Studio Art 254.
Ms. Buie/Offered every year

262 ILLUSTRATION STUDIO
Refer to course description under Studio Art 262.
Mr. Krueger/Offered every other year

278 VIDEO PRODUCTION STUDIO
Refer to course description under Studio Art 278.
Mr. Simon/Offered every year

Courses in theater arts:

110 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING
Refer to course description under Theater Arts 110.
Mr. Schroeder/Offered every year

111 VOICE AND DICTION
Refer to course description under Theater Arts 111.
Mr. Schroeder/Offered every year

112 THE CREATIVE ACTOR
Refer to course description under Theater Arts 112.
Mr. Munro, Mr. DiIorio/Offered every semester

113 ACTOR AS THINKER
Refer to course description under Theater Arts 113.
Mr. Munro/Offered every semester

114 TECHNICAL THEATER
Refer to course description under Theater Arts 120.
Ms. Kurki/Offered every semester

126 ENVIRONMENTAL STUDIO
Refer to course description under Theater Arts 126.
Ms. Kurki/Offered every other year

C. LANGUAGE, COMMUNICATION, AND IDENTITY EMPHASIS

Introductory courses:

017 INTRODUCTION TO CULTURAL GEOGRAPHY
Refer to course description under Geography 017.
Mr. Johnson/Offered every year

105 SELF AND SOCIETY
Refer to course description under Sociology 105.
Staff/Offered every other year

110 INTRODUCTION TO WOMEN'S STUDIES
Refer to course description under Sociology 110.
Ms. Ewick, Staff/Offered every year

120 INTRODUCTION TO SOCIAL ANTHROPOLOGY
Refer to course description under International Development 120.
Mr. Jones/Offered every year

159 VALUES IN SCIENCE AND TECHNOLOGY
Refer to course description under Environment, Technology, and Society 159.
Ms. Grad, Mr. Renn/Offered occasionally

160 LANGUAGE, EMOTIONS, THOUGHT, AND CULTURE
Refer to course description under Psychology 160.
Mr. Bamberg, Ms. Budwig/Offered periodically

Courses in language, semiotics, symbolism, and ideology:

191 LANGUAGE DIVERSITY IN THE UNITED STATES
Refer to course description under English 191.
Ms. Johnson/Offered every year

192 ETYMOLOGY
Refer to course description under English 192.
Mr. Blinderman/Offered every year

249 SIGNS AND CROSSROADS: SEMIOTIC THEORY AND PRACTICE
Refer to course description under English 249.
Ms. Gertz/Offered periodically

251 LANGUAGE DEVELOPMENT
Refer to course description under Psychology 251.
Mr. Bamberg, Ms. Budwig/Offered every year

252 NARRATIVE DISCOURSE
Refer to course description under Psychology 253.
Mr. Rosenbaum/Offered every year

260 LITERACY DEVELOPMENT
Refer to course description under Education 260.
Mr. Dickinson/Offered every year

262 COMMUNICATION: VERBAL AND NONVERBAL
Refer to course description under Psychology 262.
Mr. Wiener/Offered periodically

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM, AND SYMBOL
Refer to course description under Psychology 276.
Mr. Kaplan/Offered periodically

Courses in communication and culture:

136 STUDIES IN FRENCH CULTURE
Refer to course description under French 136.
Mr. Spingler, Ms. Kaufmann/Offered every year

146 INTRODUCTION TO CINEMA IN SPAIN
Refer to course description under Spanish 148.
Mr. D'Lugo/Offered every other year

148 INTRODUCTION TO CINEMA IN LATIN AMERICA
Refer to course description under Spanish 148.
Mr. D'Lugo/Offered every other year

150 THE NEW GERMAN CINEMA
Refer to course description under German 150.
Mr. Schatzberg/Offered every other year

170 URBAN SOCIAL GEOGRAPHY
Refer to course description under Geography 170.
Ms. Hanson/Offered every year

184 NARRATION IN LITERATURE AND CINEMA
Refer to course description under French 184.
Ms. Butzel/Offered periodically

191 FRENCH VERSUS AMERICAN TELEVISION
Refer to course description under French 191.
Ms. Butzel/Offered every other year

213 GENDER AND THE CITY IN THE U.S.
Refer to course description under History 213.
Ms. Deutsch/Offered periodically

219 HISTORY OF AMERICAN WOMEN
Refer to course description under History 219.
Ms. Deutsch/Offered every year

251 MEDIA AND SOCIETY
Refer to course description under Sociology 251.
Staff/Offered periodically

275 LANGUAGES OF INDIVIDUALISM AND COLLECTIVISM
Refer to course description under Psychology 275.
Mr. Wertsch/Offered periodically

286 CROSS-CULTURAL PERSPECTIVES ON HUMAN DEVELOPMENT
Refer to course description under Psychology 286.
Ms. Uzgiris/Offered every other year

289 MIND IN SOCIOCULTURAL CONTEXT
Refer to course description under Psychology 289.
Mr. Wertsch/Offered every year (except 1992-93)

Comparative Literature

PARTICIPATING FACULTY

Kenneth Hughes, Ph.D.: *program coordinator*: eighteenth- to twentieth-century European literature, literary theory

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

María I. Acosta Cruz, Ph.D.: Baroque literatures, postmodernist narrative

Carol C. D'Lugo, Ph.D.: Spanish and Spanish-American narrative, literary theory

Marvin A. D'Lugo, Ph.D.: Hispanic literature and film, narrative theory

William Ferguson, Ph.D.: Spanish Golden Age literature, twentieth-century Hispanic literature

Everett Fox, Ph.D.: Jewish ritual and folklore, classical Jewish thought

Hartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann, Ph.D.: French feminism, literature and existentialism, French and Francophone cultural studies, European novel

Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science

Michael K. Spingler, Ph.D.: French theater and film, comparative drama, translation

Martine Voiret, Ph.D.: eighteenth-century French literature

ADJUNCT FACULTY

Martyn J. Bowden, Ph.D.
John Conron, Ph.D.
SunHee Kim Gertz, Ph.D.
Bernard Kaplan, Ph.D.

UNDERGRADUATE PROGRAM

THE MAJOR IN COMPARATIVE LITERATURE: PROGRAM DESCRIPTION

Comparative literature is a wide-ranging, multicultural program of studies in poetry, prose, drama, film, and related arts. Offered by the Department of Foreign Languages and Literatures, the program is by nature interdisciplinary and has strong ties with several other departments in the University. In addition to the courses offered in comparative literature and literatures in foreign languages, the student is encouraged to take courses in English, humanistic geography, philosophy, and visual and performing arts. One of the special aspects of the program is the emphasis on developing a practical and critical approach to texts. This may take the form of play production, seminars in translation of lyric poetry and drama, and supervised work in contemporary critical theory (i.e., relations between text and performance, spectator positioning, and reader response).

PROGRAM REQUIREMENTS

1. No fewer than five courses taken beyond the intermediate level in one or more foreign languages. (An intermediate-level course in a second foreign language may be used in certain cases toward the fulfillment of the language course requirement.)
2. No fewer than five courses in comparative literature, at least two of which should have a strong theoretical component.
3. A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty advisor.

COURSES

112 THE FAIRY TALES OF THE BROTHERS GRIMM/Lecture, Discussion
Refer to course description under Literature Courses Conducted in English: German 112.
Mr. Kaiser/Offered every other year

115 READING MODERN FICTION/Lecture, Discussion
An introduction to influential and provocative works of modern fiction, with emphasis on the short story and novella. We discuss the distinctive sensibility of modernism and

the kinds of fictional language this sensibility has created. The course begins with Dostoyevsky's *Notes from Underground* and concludes with Milan Kundera's *The Unbearable Lightness of Being.*
Ms. Kaufmann/Offered periodically

117 INTRODUCTION TO THE HEBREW BIBLE I: NARRATIVE AND LAW/ Lecture, Discussion
Refer to course description under Hebrew 117.
Mr. Fox/Offered every other year

118 INTRODUCTION TO THE HEBREW BIBLE II: PROPHECY AND POETRY/ Lecture, Discussion
Refer to course description under Hebrew 118.
Mr. Fox/Offered every other year

119 IMAGES OF ROME/Lecture, Discussion
This course explores notions of the "Eternal City" as a mythic crossroads for the West, for Europeans, and for Italians, where conflicting perceptions of Rome are represented. By examining historical writing, literature, the visual arts, and film, the class considers the ways these cultural texts embody and reflect larger conceptions of Western civilization.
Ms. Butzel, Mr. Burke/Offered every other year

120 THE EPIC JOURNEY/Lecture, Discussion
A comparative and cross-cultural examination of the epic as a recurring literary form. Special attention is paid to the various forms and functions of the hero's journey. Epic journeys may or may not have goals that are clear to the hero; they may be wanderings in unknown parts of the physical world, or they may be representative of various types of spiritual striving and trial. Our task is to define and articulate the various types of epic voyage and to relate their differences and similarities to the values of the societies that gave rise to them. Included in the term's reading are selections (in English translation) from Homer's *Odyssey,* Vergil's *Aeneid*, Apollonius's *Argonautica* and Apuleius's *Ass.*
Mr. Burke/Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS/Lecture, Discussion
Refer to course description under Screen Studies 121.
Mr. Benelli, Ms. Butzel/Offered every other year

123 THE MIDRASHIC TRADITION/Lecture, Discussion
Refer to course description under Hebrew 123.
Mr. Fox/Offered every other year

146 INTRODUCTION TO CINEMA IN SPAIN/Lecture, Discussion
Refer to course description under Spanish 146.
Conducted in English.
Mr. D'Lugo/Offered every other year

147 STUDIES IN SPANISH CINEMA/Lecture, Discussion

Refer to course description under Spanish 147.
Conducted in English.
Mr. D'Lugo/Offered every other year

148 INTRODUCTION TO CINEMA IN LATIN AMERICA/Lecture, Discussion

Refer to course description under Spanish 148.
Mr. D'Lugo/Offered every other year

149 STUDIES IN LATIN AMERICAN CINEMA/Lecture, Discussion

Refer to course description under Spanish 149.
Conducted in English.
Mr. D'Lugo/Offered every other year

150 THE NEW GERMAN CINEMA/Lecture, Discussion

Refer to course description under German 150.
Mr. Schatzberg/Offered every other year

151 MEDIEVAL LITERATURE/Lecture, Discussion

Refer to course description under English 150.
Ms. Gertz/Offered every year

155 STUDIES IN ITALIAN FILM: NEOREALISM/Lecture, Discussion

Explores the political, cultural, and aesthetic role of Neorealist cinema in Italy. The linkage between film, history, and nationality during the years 1942-1951 directs us to broader questions concerning the relations between art and politics in fascist, Resistenza, and contemporary Italian culture. In addition to film texts and selections from the controversial critical debate over Neorealism in film and cultural history, we consider both precursors and inheritors of neorealist cinema.
Ms. Butzel/Offered every other year

160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR/Lecture, Discussion

Refer to course description under French 160.
Mr. Spingler/Offered every other year

169 PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE/Dialogical Lecture

Refer to course description under Psychology 256.
Mr. Kaplan/Offered every other year

175 LITERATURE AND EXISTENTIALISM/Seminar

The course is an introduction to major writers and themes of existentialism from Dostoyevsky, Kierkegaard, and Nietzsche to Sartre, Beauvoir, and Camus. Beginning with a study of the cultural origins of existentialism as a distinctively modern, European sensibility, we explore why and how existentialist thought has found expression with unique appropriateness as both philosophical literature and literary philosophy.
Ms. Kaufmann/Offered periodically

180 LATIN AMERICAN LITERATURE IN TRANSLATION/Lecture, Discussion
Refer to course description under Spanish 180.
Ms. Acosta Cruz, Ms. D'Lugo/Offered every other year

181 THE LITERATURE OF MODERN SPAIN IN TRANSLATION/Lecture, Discussion
Readings representing the major authors and trends in the literature of Spain in the nineteenth and twentieth centuries. Particular emphasis on the realist novels of Galdós and Clarín in the nineteenth century; the philosophical novels of Unamuno and Pérez de Ayala, poetry and theater of Lorca, and the postmodernist narratives of Goytisolo in the twentieth century.
Mr. D'Lugo/Offered every other year

184 NARRATION IN LITERATURE AND CINEMA/Lecture, Discussion
Refer to description under French 184.
Ms. Butzel/Offered periodically

185 THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY/Lecture, Discussion
Refer to description under Russian 185.
Mr. Hughes/Offered every other year

188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM, AND THE ARTS/Lecture, Discussion
Refer to course description under German 188.
Mr. Schatzberg/Offered every other year

190 THE PLAY AND ITS STAGES/Seminar, Workshop
A critical approach to the dramatic text based on historical and material conditions of performance. The course considers the changing ways that meanings are made through styles and conventions of performance (including set, costume, mask, and vocal delivery) that are specific to historical and cultural moments. Playwrights considered may include Sophocles, Shakespeare, Racine, Molière, Chekhov, Ibsen, Brecht, Genet, and Beckett. There is scene work in class.
Mr. Spingler/Offered every other year

191 FRENCH VERSUS AMERICAN TELEVISION/Lecture, Discussion
Through the analysis of both mainstream and avant-garde video programming from France and the U.S., the course is designed to give students experience in understanding and theorizing different modes of cultural representation. The course uses previously unavailable materials obtained through PICS (Project for International Communications Studies), a consortium of five universities including Clark. Some of the principal questions we ask are: What kinds of critical procedures are useful in analyzing television? What constitutes a television text in different Western nations? How can we understand the relation of television programming to different cultural situations? Reading includes essays on television theory and analysis and studies of French and American culture.
Ms. Butzel/Offered every other year

192 RICHARD WAGNER'S MUSIC DRAMAS: MYTH AND INNOVATION/ Seminar

Refer to course description under German 192.
Mr. Kaiser and Mr. Belet/Offered periodically

197 THE FAUST THEME IN LITERATURE AND MUSIC/Seminar

Refer to course description under German 197.
Mr. Kaiser/Offered every other year

210 POSTMODERNISM/Seminar

A comparative approach to postmodernism from the 1940s to the present. An overview of postmodernism and its theories as a wide-ranging cultural movement is followed by readings and discussions of postmodernist writers who have extended boundaries of genre, authorship, theory, and interpretation of literature. Authors include: Julian Barnes, Jorge Luis Borges, Italo Calvino, Julio Cortázar, Milan Kundera, Stanislaw Lem, Gabriel García Márquez, Salman Rushdie, Mario Vargas Llosa, Fay Weldon.
Ms. Acosta Cruz/Offered every other year

215 WOMEN'S WRITING IN CONTEMPORARY FRANCE/Seminar

This course is a study of major works of French fiction and theory as they question and illuminate each other. We explore these works in the context of the contemporary French feminist controversy between theories of equality and theories of difference, particularly as they relate to notions of *l'écriture feminine*. Readings include Colette, Simone de Beauvoir, Helène Cixous, Marguerite Duras, Luce Irigaray, Monique Wittig, Julia Kristeva. Prerequisite: permission of the instructor.
Ms. Kaufmann/Offered every other year

230 COMIC MIRRORS AND SELF-CONSCIOUS HEROES IN FRENCH THEATER/ Lecture, Discussion

A study of comic tradition of self-referential theater in France touching on the play-within-the-play, masques,and masquerades, as well as the ironic exposures of theatrical conventions and parodies of dominant theatrical styles. Closely examines seventeenth-century classicism through contemporary absurdist and avant-garde theater. Representative playwrights include: Molière, Marivaux, Musset, Feydeau, Anouilh, Sartre, Ionesco, and Genet.
Mr. Spingler/Offered periodically

240 STUDIES IN MODERN NARRATIVE FORM/Lecture, Discussion

The course investigates modifications of the traditional novel form in the twentieth century, changes which have enabled the novel to maintain its position as the preeminent literary genre. Representative works of the following authors are studied: Joyce, Woolf, Beckett, Thomas Mann, Robbe-Grillet, Thomas, and Doctorow.
Mr. Hughes/Offered every other year

249 SIGNS & CROSSROADS/Seminar

Refer to course description under English 249.
Ms. Gertz/Offered periodically

251 SEMINAR IN LITERARY CRITICISM/Seminar

Seeks to develop critical sensibilities by concentrating on three major modes of literary

criticism: textual, psychoanalytic, and Marxist. We read and discuss both original sources (Freud, Marx, and others) and a wide range of criticism based on their methods. An attempt is made to demonstrate that a complete critical engagement with a literary work must start from a close examination of the text itself, proceed to a consideration of the interaction between text and the author's life and mind, and, from there, to an investigation of the social setting that conditions text, life, and mind. In order to unify discussion and development, the seminar centers around a thorough critical occupation with the works, life, and society of Franz Kafka. Primary material includes his short stories, his novel *The Trial*, *Letter to His Father*, and *Letters to Milena*.
Mr. Hughes/Offered periodically

252 CHAUCER/Seminar
Refer to course description under English 251.
Ms. Gertz/Offered every other year

260 INTERPRETATIONS OF DREAMS AND OTHER PRODUCTS OF THE IMAGINATION/Lecture, Discussion
Refer to course description under Psychology 260.
Mr. Kaplan/Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM, AND SYMBOL/Seminar
Refer to course description under Psychology 276.
Mr. Kaplan/Offered periodically

277 THE CREATIVE PROCESS/Seminar
Refer to course description under Psychology 277.
Mr. Kaplan/Offered periodically

278 MODERN POLITICAL LITERATURE/Seminar
Refer to course description under English 278.
Mr. Sultan/Offered every year

285 AMERICAN MODERNISMS/Discussion
Refer to course description under English 285.
Mr. Conron/Offered periodically

286 AMERICAN SPACES/Discussion
Refer to course description under English 286.
Mr. Conron/Offered every year

287 STUDIES IN LANDSCAPE/Seminar
Refer to course description under English 287.
Mr. Conron/Offered every other year

288.1 ART OF THE CITY: PARIS/NEW YORK/Discussion
A comparative structural and cultural analysis of two urban designs, Haussmann's Paris and Olmsted's New York; of the visual representation of the two cities by French Impressionists and the American School of Ashcan painters; and of the literary interpretation of the cities by two urban poets, Charles Baudelaire and Walt Whitman. The cities are considered as theaters in which cultural meanings are produced through

1) spatial composition (the city as assemblage of constructed sets, including boulevards and other promenades, monuments, department stores) and 2) performances in the set (the city as dramatized narrative). Among the questions to be explored is the matter of cultural kinships and differences between France and the United States. Prerequisite: Permission of either instructor.
Mr. Conron, Mr. Spingler/Offered every year

288.2 ART OF THE CITY: LOS ANGELES/Discussion
Refer to course description under English 2882.
Mr. Conron/Offered periodically

294 HISTORY OF THE ENGLISH LANGUAGE/Lecture, Discussion
Refer to course description under English 294.
Ms. Gertz/Offered periodically

299 GENDER AND FILM/Lecture, Discussion
Refer to course description under Screen Studies 299.
Ms. Butzel/Offered every other year

Computer Science

PROGRAM FACULTY

Kenneth J. Basye, Ph.D.: artificial intelligence, robotics
Don Cantor, Ph.D.: software engineering, expert systems
Arthur Chou, Ph.D.: algorithms, complexity theory
Harvey Gould, Ph.D.: computer simulation
Frederic Green, Ph.D.: theory of computation, structural complexity, circuit complexity
David Joyce, Ph.D.: semantics of programming languages
Robert W. Kilmoyer Jr., Ph.D.: artificial intelligence

THE COMPUTER SCIENCE UNDERGRADUATE MAJOR

The department offers a strong program in which computer science is viewed as an essential discipline within the general academic mission of Clark University. In keeping with Clark's liberal arts tradition, the program emphasizes concepts and principles, rather than engineering. The computer science major provides preparation for a variety of career paths, both inside and outside the academic community. The program includes two courses in computer programming, which serve as the general introductory courses for the discipline, and four intermediate courses, which serve as the core requirements for the major and expose the fundamental principles of computer science. Beyond this, a series of elective courses is offered, in which applications and advanced topics are explored.

DECLARING A MAJOR AND CHOOSING A DEPARTMENTAL ADVISOR

The department has a system of advising to assist students with their course selections. A student must declare his/her major no later than the end of the second semester of the sophomore year. At the time a student declares a major, he/she should select an advisor from among the department faculty; the advisor will sign the "declaration of major" form available from the university registrar. This advisor will help the student design the best program of courses to suit his/her goals. A department form also is completed at this time and kept on file at the department office.

NOTICE ON CHANGES IN THE MAJOR

The requirements for the major have been changed from those described in the 1990-92 *Clark University Academic Catalog.* Students declaring a major after June 1, 1992, must satisfy the requirements listed below. Those who declared before June 1, 1992 may satisfy either the old requirements or these new requirements.

REQUIREMENTS FOR THE COMPUTER SCIENCE MAJOR

To graduate as a computer science major a student must complete the following courses:

A. These two introductory courses:
  CSci 101 *Programming* I
  CSci 102 *Programming* II
B. These two mathematics courses:
  Math 114 Discrete Mathematics
  Math 120 Calculus I or the equivalent (Math 124 or the two-semester sequence, Math 110, Math 111)
C. These four core courses:
  CSci 140 *Assembly Language and Computer Organization*
  CSci 160 *Data Structures and Algorithms*
  CSci 170 *Analysis of Programming Languages*
  CSci 180 *Automata Theory*
D. Five 200-level courses in Computer Science.

SUGGESTED PROGRAM SEQUENCE

It is important to begin the computer science program early. An ideal program sequence begins with CSci 101, P*rogramming I,* in the fall of the first year, followed by CSci 102, *Programming II,* and Math 144 *Discrete Mathematics*, in the spring semester. The four core courses and Cal*culus* should be taken as soon as possible thereafter.

Discrete Mathematics, Math 114, which covers the concepts, principles, and methods of related mathematics, is required of all majors and should be taken as early as possible by students who may be interested in computer science. This course is essential for most computer science beyond the introductory level. All majors also are required to take one semester of calculus. *Discrete Mathematics* and *Calculus* should be taken during the freshman year, if possible. If both cannot be taken during the freshman year, preference should be given to *Discrete Mathematics.* These requirements are meant to ensure that all students will have the appropriate mathematical tools in order to study computer science.

HONORS PROGRAM

A major who maintains at least a 3.2 average (4.0 scale) in courses required for the major may apply for the department honors program. A student's application in writing must be directed to a prospective honors advisor or the chair of the department by the end of the student's junior year. Honors may be achieved in one of two ways: (1) a unified four-course sequence as a senior (some parts of which may consist of directed readings), followed by a comprehensive examination; (2) an honors project to be presented at an oral defense or at a department seminar. This project may be an independent or joint research thesis, or it may be a programming project. Supporting course work may be required. Students interested in pursuing the honors program should consult their department advisor. The student registers for CSci or Math 299.8 for course credit for an honors thesis. Upon satisfactory completion of the program, the department may recommend graduation with honors, high honors, or highest honors.

CLUSTERS IN COMPUTER SCIENCE FOR NONMAJORS

Many majors require that a student take a cluster of courses in some discipline other than the student's major field. A suggested cluster in computer science might consist of the two introductory programming courses, the discrete mathematics course, and one or more electives of interest to the student, although there are other possibilities as well. See a member of the computer science faculty for further advice on the design of clusters.

COMPUTER SCIENCE COURSES

100 COMPUTER APPLICATIONS/Lecture, Laboratory

Students learn to use four programs available on Clark's Macintosh computers: a word processor, a painting and drawing program, a spread sheet processor, and a data base management system. They also learn a little bit about the programming language Pascal, and write two or three short programs. Lecture topics include the history of computing since about 1940, operating systems, and how large software systems are developed. There are no prerequisites for the course. It is meant to be an introduction to computing for persons who want to use personal computers, and to understand in a general way what computing is about. Prospective computer science majors and persons who plan to write original programs should prefer CSci 101 to CSci 100.
Mr. Cantor/Offered every year

101 COMPUTER PROGRAMMING I/Lecture, Laboratory

An introduction to computer programming using Pascal, a powerful general purpose, structured programming language. The theme of this course is the top-down approach to problem solving. Algorithms are first developed for the solutions to stated problems. These algorithms are then translated into Pascal and tested by running the resulting program on the computer. The top-down approach is used throughout the entire process. For the laboratory component, students are expected to write approximately seven programs throughout the course. Specific topics include decision making, logic design, iteration, arrays, text files, and records. An introduction to the design of data structures through Pascal type definitions, using the primitive data types and the composite types of arrays and records is discussed as well. Applications are presented as they relate to business, computer simulations, and games. This course satisfies the *formal analysis* requirement. No prerequisites. This course is a prerequisite for most higher numbered computer science courses.
Mr. Chou, Mr. Green, Mr. Joyce, Mr. Kilmoyer/Offered every semester

102 COMPUTER PROGRAMMING II/Lecture, Laboratory
A Continuation of CSci 101, covering such topics as string manipulation, files of records and their processing, pointer variables,and dynamic data structures such as linked lists, stacks, queues, and binary trees. A treatment of the usage and implementation of recursion also is discussed. Approximately six programming projects are assigned as the laboratory component of the course. These projects entail the top-down design and implementation of larger programs involving the topics mentioned above. Prerequisite: CSci 101.
Mr. Chou, Mr. Green, Mr. Joyce, Mr. Kilmoyer/Offered every semester

115 COMPUTER SIMULATION LABORATORY
Refer to course description under Physics 115.
Mr. Gould/Offered every year

120 through 129 SHORT COURSES IN PROGRAMMING LANGUAGES/Lecture, Laboratory
These are short midsemester courses for 1/4 or 1/2 credit each. Each course will introduce a new programming language to students who already know at least one high level programming language. The prerequisites are one semester college-level programming course and familiarity with DCL and EDT on the VAX computer system. These courses are offered as credit/no-credit and do not fulfill any requirements towards the computer science major.
Staff/Offered periodically

140 ASSEMBLY LANGUAGE AND COMPUTER ORGANIZATION/Lecture, Laboratory
Covers fundamentals of assembly language programming in the VAX/MACRO language such as data representation, the instruction set, addressing mode, macros, procedures, input and output facilities, assembler and linker, introduction to record management system and system services, introduction to logic circuits, and basic machine organization of conventional computers in general and VAX in particular. The goal is to understand how a computer performs various tasks that are completely hidden from the user in a high-level language. For the laboratory component, students will write several programs in VAX 11 assembly language. Prerequisite: CSci 102.
Mr. Chou, Mr. Joyce/Offered every year

160 DATA STRUCTURES AND ALGORITHMS/Lecture, Discussion, Laboratory
Deals with advanced data structures such as sets, trees, and graphs, together with the algorithms to manipulate them. Applications to searching and sorting are discussed. Throughout the course, the analysis of algorithms is stressed. The pros and cons of alternative choices of data structures or algorithms are carefully examined. Topics include: analysis of algorithms (a review of big O notation and simple recurrence relations from CSci 102 and Math 114), general trees, balanced trees, priority queues, hash tables, merge-sort, quick-sort, radix sorting and searching, and elementary graph algorithms such as finding the shortest path and constructing a minimal spanning tree. This course has a fourth hour problem solving session. Programming projects are assigned for the laboratory component. Prerequisite: CSci 102 and Math 114.
Mr. Chou, Mr. Green/Offered every year

170 ANALYSIS OF PROGRAMMING LANGUAGES/Lecture
Deals with the issues of the design and implementation of programming languages

from both the syntactic and the semantic point of view. Emphasis is on the desirable features of programming languages from a comparative standpoint. Topics include: the representation of rules of syntax, using context free grammars, parsing, semantic constructs, control structures, implementation of procedures and parameters, implementation of recursion, and an introduction to the organization of compilers. Attention is given to both compiled and interpreted languages. Functional as well as procedural programming languages are discussed. A typical group term project may be to design and implement a compiler or interpreter for the actual implementation of some language. Prerequisites: CSci 102 and Math 114.
Mr. Kilmoyer/Offered every year

180 AUTOMATA THEORY/Lecture, Discussion

Studies the abstract models of machines and languages recognized by them, and introduces the concept of computability. This course not only serves as the theoretical foundation of computer science, but also has wide applications to programming languages, linguistics, natural language processing, compiler design, and software design. It begins with a review of sets, functions, and relations, then continues with finite automata and regular languages, pushdown automata and context-free grammars, grammar transformations and normal forms, and finally the mathematical model of modern computers: Turing machines and computable functions. Some examples of unsolvable problems such as the halting problem will be discussed. This course has a fourth-hour problem solving session. Prerequisite: CSci 102 and Math 114.
Mr. Chou, Mr. Green, Mr. Joyce/Offered every year

201 PROSEMINAR IN COMPUTER SCIENCE/Seminar

The presentation of topics in computer science by and for senior undergraduates. These presentations acquaint students with diverse subjects, introduce them to researching known topics, and give them practice in presenting material to their peers. Faculty members will also present some research topics. Possible areas from which the topics may be drawn might include NP-complete problems, machine understanding of natural language, neural networks, the philosophical debate on the nature of mind and machine intelligence, automated reasoning, theory of computation, expert systems, parallel algorithms. Prerequisites: CSci 160 and CSci 170.
Mr. Chou, Mr. Green/Offered periodically

210 ARTIFICIAL INTELLIGENCE/Lecture, Laboratory

This course focuses on the fundamental ideas of artificial intelligence and on programming in Lisp. Topics included are problem representation through explicit models, notion of problem state, state variable, feedback and control, network searching, analogy and pattern recognition, natural language parsing, forward and backward deduction using rule based systems, and knowledge representations schemes. Students implement the above ideas through computer programs written in Lisp. Language instruction is provided in Lisp (or Prolog), although no prior knowledge of these programming languages is assumed. Open to all students who have taken at least one semester of programming (in any language).
Mr. Kilmoyer/Offered every year

211 TOPICS IN ARTIFICIAL INTELLIGENCE/Lecture

Selected topics in artificial intelligence are studied in more depth, assuming CSci 210, Artificial Intelligence, as a foundation course. Topics may be drawn from the fields of

expert systems, knowledge acquisition and representation, logic programming, or the use of artificial intelligence techniques in some application field, such as music. Topics vary from year to year. Prerequisite: CSci 210.
Mr. Cantor, Mr. Kilmoyer/Offered periodically

212 NATURAL LANGUAGE PROCESSING/Lecture, Laboratory

This is a course on machine understanding of natural language. Although many topics are presented, emphasis is on the use of conceptual data structures that enable the computer to form semantic representations of natural language input, and on the cognitive processes that underlie natural language understanding by humans. As a term project, students write a story-telling program which is given characters with goals and generic plans for achieving goals. The program then produces a story relating the events that transpire when the characters attempt to achieve their goals. Conceptual dependency structures are used to represent the necessary knowledge in the program. Topics include methods of parsing natural language input, recursive transition networks, augmented transition networks, semantic grammars, wait-and-see parsers, the construction of natural language interfaces for computer programs, linguistic theories, case grammars, semantic networks, conceptual dependency theory. Students write programs in Lisp to implement some of the above. Prerequisite: CSci 210.
Mr. Kilmoyer/Offered periodically

215 OPERATING SYSTEMS/Lecture, Laboratory

This advanced course studies the structure, performance, and design of operating system. Topics include concurrence, deadlocks, scheduling, and memory management. Various operating systems may be examined and compared. Students will design and implement parts of operating systems. Prerequisite: CSci 160.
Mr. Cantor, Mr. Green/Offered every other year

220 DATABASE MANAGEMENT AND SYSTEMS DESIGN/Lecture

An advanced course on the realities of database technology. The course emphasizes the goals of database management: performance, data integrity, future compatibility, and versatility. The concept of data model is examined and a specific database is discussed. The course concentrates on database design and specification. Prerequisite: CSci 160.
Mr. Cantor/Offered every other year

230 COMPILER DESIGN/Lecture, Laboratory

This course is essentially a continuation of CSci 180, Automata Theory. It uses the automata and grammars introduced in CSci 180 to design translators (compilers) for programming languages. Topics include lexical analysis, top-down parsing, bottom-up parsing, syntax-directed translation, type checking, run-time environment, code generation, and an introduction to code optimization. A typical term project is to write a compiler for a simple programming language such as a subset of C or Pascal. Prerequisites: CSci 160 and CSci 180.
Mr. Chou, Mr. Green/Offered every other year

240 COMPUTER ARCHITECTURE/Lecture

A study of the design of computers. Topics include the design of combinatorial and sequential circuits, design methodology of a basic computer, central processor organization, microprogramming, memory organization, input-output organization,

and arithmetic processor design. As time permits, further topics, such as RISC and parallel processing, are discussed. A functional, logical (theoretical) approach is adopted. (Physics 119, *Electronics Laboratory*, is recommended so that students gain hands-on experience with computer chips.) The science of design is stressed together with the existing machines. Prerequisite: CSci 140.
Mr. Chou, Mr. Joyce/Offered every other year

250 SOFTWARE DESIGN AND DEVELOPMENT/Seminar
Students consider the life cycle of large software projects, beginning with the elicitation and definition of users' requirements, and continuing through software design, documentation, coding, testing, and maintenance. Topics include: modularity, coupling, cohesion, transformational and transactional structures, and testing strategies. Working in teams, students gain practical experience developing software to solve concrete problems. Prerequisites: CSci 160 and CSci 170.
Mr. Cantor/Offered periodically

270 THEORY OF COMPUTATION/Lecture
This course studies the nature and formal models of computation (by computers), its power and limitation (computability versus uncomputability), the computational complexity of various problems, and the applications in logic and computer science. The question "What is a program?" is answered in full generality, establishing the theoretical underpinnings of all software construction. Turing machines, general recursive functions, and other standard models of computation are introduced and are shown to be equivalent, leading to the formulation of Church's thesis. Other aspects of recursion theory such as unsolvable problems and recursively enumerable languages are introduced. We also address the more practical question "What is an efficient program?" in an introduction to modern complexity theory. Here the emphasis is on the theory of NP-completeness and related notions which have important analogies in classical recursion theory. Prerequisite: CSci 180.
Mr. Chou, Mr. Green/Offered every other year

Cultural Identity and Global Processes

PROGRAM FACULTY

Parminder Bhachu, Ph.D., *Henry R. Luce Professor of Cultural Identity and Global Processes:* construction of identities and ethnicities, immigration diasporas, women and wage labor markets, nationalist cultures and global processes

PROGRAM

The Henry R. Luce Professorship and Program in Cultural Identity and Global Processes are interdisciplinary and explore an emerging paradox of international importance. Dramatic growth in transnational and global phenomena has led to the existence of a global community that has significantly contributed to the demise of the nation-state. Yet, at the same time there is a resurgence of cultural identities in both regional and local contexts. Currently, this paradox takes on special urgency because never before have both communities and international structures had available such powerful tools for persuasion and coercion. These tools are altering the ways that groups interact with each other, with the state, and with the international community.

The Luce Program's perspective is that identities are socially constructed and negotiated in historical and geographical contexts. In recent times, these cultural identities have emerged and interacted in new ways in response to global processes. The Luce Professorship explores ideas of culture and cultural diversity by focusing on social/cultural processes in an interdisciplinary teaching format. The examination of this topic from an interdisciplinary perspective, a major strength of Clark scholars, is critical to our understanding of a rapidly changing world, especially as it stands at the brink of new global realities.

The Luce Professor and Program are continuously involved in innovative undergraduate curriculum revisions. This is reflected in the initiation of entirely new courses and the organization of symposia and workshops, with both national and international scholars, to explicate further these currently critical and globally-relevant themes.

COURSES

Note: All of the following courses require some social sciences/humanities background. Preference will be given to students who already have taken, or are in the process of taking, courses in government, cultural geography, women's studies, sociology, history, or other social science or humanities areas.

161 CULTURAL IDENTITIES AND GLOBAL PROCESSES

This course explores the impact of local, national, and international forces on the formation of cultural identities at a time of rapid and, in fact, dramatic social changes. It focuses on contemporary urban cultures, to examine local and national cultural styles and identities as they are globally determined as well as locally interpreted through the codes and values of local subcultures. Regional, national, and international political forces have as much of an impact on "American" cultures as they do on a vast majority of cultures internationally. This course emphasizes the *elastic* and the *plastic* nature of cultures and identities, and the importance of *time, place,* and *space* as a means of understanding the emergence of new class and cultural styles and identities in the increasingly culturally diverse setting of the 1990s. It points to the complex nature of social and cultural change, which continuously shapes and reshapes minority and majority cultures in the context of local, national, and global economic and political processes.

Ms. Bhachu/Offered every year

271 RACE, MIGRATION, GENDER, AND ETHNICITY

This course examines the impact of migration on ethnicity, especially as explored from the perspectives of gender and race. Migration patterns of migrants as well as settlers are studied to point to the complex nature of migration and settlement. The course focuses on the impact of the *economic on the cultural* as examined through the impact of migration and women's engagement with the waged labor market. Changes in the sexual division of labor within the household and the emergence of women's new cultural patterns in different economic locations, especially in Europe and the U.S., are explored. Emphasis is placed on the importance of class, ethnicity, and race in the formation of "ethnic cultures" to point to their fluid and heterogeneous textures, especially as they respond to continuously changing and culturally diverse settings.

A central theme of discussion is the formation of ethnic identities as they are influenced by, and filtered through, local and national economic and political forces.
Ms. Bhachu/Offered every other year

275 CULTURE, CONSUMPTION, AND CLASS IN LOCAL AND GLOBAL CONTEXTS

The course focuses on consumption as it is culturally and ethnically determined, gendered, classed, and impacted upon politically both by individual consumers and capitalist producers. It emphasizes the ways in which people and groups define themselves and manufacture identities through the use of distinctive symbols of consumption and consumer products. The focus of the course is on the prime actors of consumption, the consumers, both male and female, and who consumes what in specific contexts. Consumption and consumer cultures and commodities are examined as they are locally, regionally, and nationally determined through the codes of class, ethnicity, and gender. The ways in which consumption is linked to the construction of identity values are explored. A central theme is the interplay between the forces of the world market and cultural identities, between local and global processes, and between consumption and cultural strategies. To capture and understand these trends, students are required to conduct a small ethnographic project on consumer pattern, product, or culture.
Ms. Bhachu/Offered every other year

278 THE CREATION OF NATIONALISMS, NATIONALIST CULTURES, AND SYMBOLS

At a time of rapid global changes and globalization, nationalisms and nationalist cultures have grown dramatically in the 1990s. This course explores the symbols and the cultural values that are activated and highlighted to create and define nationalist cultures. Which "imagined communities," "invented traditions," and "symbolic economies" are generated to create nationalist cultures? What is the material culture that defines nationalist movements? What are the key consumer commodities, cultural symbols, and language and dress codes that are invested with heightened significance and give meaning to nationalist cultures? What is the role of gender in creating nationalist cultures? Are there gendered cultures that define nationalisms differently? Why and how? Are women more nationalistic than men? How are cultural resources mobilized to both activate and to deactivate nation-state hegemonies and the force of nationalist movements? This course, by focusing on the culture and the cultural symbols of nationalisms, explores their importance in the generation of strategic nationalist identities and examines the *cultures of nationalist resistance* that may already be inherent in the creation of nationalist trends.
Ms. Bhachu/Offered every other year

Economics

DEPARTMENT FACULTY

Frank Puffer, Ph.D., *chair:* regional economics, African economic development, health economics

John C. Brown, Ph.D.: economic history

Young Sook Eom, Ph.D.: environmental economics

Pius C. Eze, Ph.D.: health economics

James Peter Ferderer, Ph.D.: monetary theory, macroeconomics, finance

Wayne B. Gray, Ph.D.: labor economics, econometrics, microeconomic theory

Robert C. Hsu, Ph.D.: economic development, comparative economic systems, international economics

Attiat F. Ott, Ph.D.: public finance, macroeconomics, health economics

Roger C. Van Tassel, Ph.D.: international trade and finance, public economy

E.C.H. Veendorp, Ph.D.: microeconomic theory

Maurice D. Weinrobe, Ph.D.: monetary economics, economics of housing

EMERITI FACULTY

Howard W. Nicholson, Ph.D.: history of economic thought, accounting, investment, economic methodology

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions and to help the student develop habits of systematic thought.

GOALS OF THE MAJOR

The rationale for economics majors can be stated briefly and simply: We believe economics offers useful insights into fundamental human behavior in the decision-making process and into a great variety of national issues. While we recognize that economics alone seldom gives answers, we also feel that there are few issues, at least in the social sciences, in which the contribution of formal economic analysis does not play a necessary role. There are obviously some advantages in an economics major besides a more broadly accepted educational value. It is a good preparation for law, business, and a number of other professional and nonprofessional careers. However, the emphasis of our program is the educational one. The major in economics is devised to help the student think and develop.

Students planning to pursue graduate work should consult their departmental advisor and assist in developing an appropriate plan of study. For graduate work in economics, students are encouraged to take calculus and additional courses in math.

REQUIREMENTS FOR THE MAJOR

1. **Economic theory courses**
   Econ 010, Economics: A Comparative Approach
   Econ 011, Principles of Economics
   Econ 205.1, Microeconomic Theory
   Econ 205.2, Macroeconomic Theory

2. **Quantitative methods course**
   Econ 160, Introduction to Statistical Analysis
3. **Economics electives**
   Five economics courses, other than the above. At least two of the five courses must be at the 200 level. An internship may not be used to satisfy one of the elective course requirements.
4. **Related courses**
   Two courses outside the Economics Department, but related to the major, must be taken. Related courses may be of two types. Some courses, listed below, will satisfy the related course requirement regardless of the economics elective courses in the major:
   - Math courses at the level of calculus or above.
   - Management courses in accounting, finance, MIS, and operations management
   - Computer Science courses
   - E.T.S. 124, *Environment and Economy*
   - Geog 015, *Economic Geography*
   - Geog 262, *Urban Economic Geography*

Other courses may be related to the major through a connection with the economics electives a student has chosen. For example, if a student selected Econ 243, *American Economic History*, as an elective, any American history course offered by the History Department would then be related to the major. Similarly, most courses in international development would be related to the Economics major if the student elected to take Economics 128 or 228, *Economic Development*. Many other possible relations exist. Students should consult with their departmental faculty advisor for related courses of this general type.

HONORS REQUIREMENTS

Economics majors with strong records may be accepted by the department as candidates for departmental honors. For students to receive departmental honors, they must successfully complete an honors thesis.Prospective candidates for honors should identify an area of interest and a potential faculty supervisor of the honors thesis during the spring of the junior year. During the fall of the senior year, the students will enroll in Economics 282, *Honors*. The student then writes a thesis under the direction of a faculty supervisor. During the spring of the senior year, the thesis is completed and evaluated by the department for possible departmental honors.

GRADUATE PROGRAM

The University offers a program of graduate study and research leading to the doctor of philosophy in economics. Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for well-prepared students. These appointments exempt their holders from tuition fees, and some carry stipends in varying amounts. Several teaching assistantships are also awarded, enabling graduate students to gain experience in undergraduate instruction. These cover remission of tuition and a cash payment, currently up to $7,900, for part-time work.

Two full academic years of graduate work, or the equivalent in part-time work, are necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. "In residence" is broadly defined as work done at Clark University. All candidates for the Ph.D. in economics are required to demonstrate proficiency in economic theory, econometrics, and mathematical economics, and to complete three selected fields.

Econometrics and mathematical economics are satisfied by passing designated courses offered in the department or, in the case of prior preparation, by passing a test given by the department.

The economics theory requirement includes micro-theory and macro-theory. The student meets the economic theory requirement by satisfactory completion of the theory courses, Economics 300, 301.1, 301.2, 302.1, and 302.2, and by passing a six-hour preliminary examination.

Upon completion of coursework in economic theory, econometrics, and mathematical economics and passing of the preliminary examination, the student is admitted to candidacy for the Ph.D. Fields of specialization may be selected from among the following: monetary economics, public finance, industrial organization, international economics, comparative economic systems, advanced theory, health economics, environmental economics, economic development, labor economics, or one field selected from related subjects. Not all graduate field courses are offered each year. At least two field courses are offered annually. Typically, two fields are taken during the second year, and the remaining field requirement is completed, along with the beginning of the dissertation, during the third year.

Soon after having completed the field requirements, each student is expected to develop a written prospectus of a dissertation. The student then makes a presentation at an informal conference with all graduate students and faculty invited to attend. After the presentation, the primary advisor, in consultation with the chair, appoints the dissertation committee if the topic is judged feasible.

Upon completion of the dissertation in a form acceptable to the committee, the candidate makes a copy of the dissertation available to the department, the faculty, and graduate students. After a period of two weeks, to permit sufficient time for reading of the dissertation, the candidate presents the dissertation at a seminar open to all faculty and graduate students in the department. Final approval of the dissertation is granted by the committee after consideration of any suggested changes or challenges arising from the seminar. If the dissertation is not completed within five years of admission to candidacy, the student must successfully retake the preliminary examination in economic theory before defending the dissertation.

The dissertation must make a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching and research experience at Clark, or other such teaching and research as the department may regard as equivalent, is prerequisite to the doctoral degree.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of a two-year residency and preliminary exam. In the case of students who do not continue toward the Ph.D., the M.A. may be awarded upon satisfactory completion of twelve required courses or a one-year residency, an M.A. thesis, and an oral exam.

A student should discuss program plans with the graduate student advisor on or before registration day, and secure approval of the course program.

INSTITUTE FOR ECONOMIC STUDIES

The Institute for Economic Studies, funded with an initial grant from the John M. Olin Foundation, began its operations in January of 1980. The Institute's main objectives are to:

1. research significant economic issues and propose policy options to deal with them; and

2. disseminate the results of the research—particularly its policy recommendations—to a broad audience.

The Institute provides a framework within which new curricula and teaching methods may be developed. In addition, a Scholars-in-Residence Program was instituted in 1984 to stimulate the exchange of ideas and dialogue between guest scholars and members of the Institute and Economics faculty.

The Institute director is Professor Attiat F. Ott.

CENTER FOR THE STUDY OF HEALTH ECONOMICS

Clark University's Center for the Study of Health Economics was officially inaugurated in August of 1987 as an integral part of the Economics Department and the Institute for Economic Studies. The primary goal of the center is to conduct research on health economics issues of concern to policy makers, providers, and consumers of health care services.

COURSES

010 ECONOMICS: A COMPARATIVE APPROACH/Lecture, Discussion

The student is introduced to the vital contribution economics can make to systematic thought and understanding by analysis of important current policy issues. Rather than emphasizing economic theory, the course begins with a comparative analysis of issues in the social sciences that are of obvious and important concern. From a study of issues, the course proceeds to show how development and use of some basic economic concepts can aid materially in the analysis. Open to first-year students. Multiple sections.
Staff/Offered every semester

011 PRINCIPLES OF ECONOMICS/Lecture, Discussion

Introduction to economic analysis. Develops a set of economic concepts utilized in the 200-level courses offered in the department. Elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and to illustrate applicability of the analysis. Open to first-year students. Prerequisite: Economics 010.
Staff/Offered every semester

108 INTERNATIONAL ECONOMICS: TRADE AND FINANCE/Lecture, Discussion

Introduction to the basic principles of international economics. The course examines the development of the international monetary system and current problems. Students planning to take Economics 207 or 208 should not take 108. Prerequisites: Economics 010 and 011.
Mr. Van Tassel/Offered every year

113 MONETARY ECONOMICS: THEORY AND POLICY/Lecture, Discussion

The theory of money and its role in the modern economy are examined, as are determinants of the supply of money and analysis of the role of monetary policy in stabilization policy. Commercial banks and nonbank financial intermediaries are studied. Prerequisite: Economics 010.
Staff/Offered every year

126 PUBLIC POLICY TOWARD BUSINESS/Lecture, Discussion

Examines the various types of industrial organization, the degrees of monopoly in

competition, and the development of public policies that affect business. Among the issues traced are the development of antimonopoly regulation, consumer protection, and public utilities. Business performance and government regulations are related to criteria from economic theory. Prerequisite: Economics 010.
Mr. Veendorp/Offered every other year

128 ECONOMIC DEVELOPMENT/Lecture, Discussion

Covers same general material as Economics 228, but requires less previous preparation in economics. Offered in alternate years with 228. See course description under Economics 228. Prerequisite: Economics 010.
Mr. Hsu/Offered every other year

142 EUROPEAN ECONOMIC HISTORY/Lecture, Discussion

See description for Economics 242. Prerequisite: Economics 010.
Mr. Brown/Offered every year

143 AMERICAN ECONOMIC HISTORY/Lecture, Discussion

See description for Economics 242. Prerequisite: Economics 010.
Mr. Brown/Offered every year

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT/Lecture

A review of political economic problems associated with such natural resources as agricultural land, energy goods, and minerals, as well as a resource common to all of us: our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market-oriented economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint. Prerequisite: Economics 010.
Ms. Eom/Offered every year

160 INTRODUCTION TO STATISTICAL ANALYSIS/Lecture, Discussion

Examines basic concepts and techniques of statistical methods in economic analysis: descriptive statistics, probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision making. Prerequisite: Economics 010.
Mr. Puffer, Mr. Veendorp/Offered every semester

171 FUNDAMENTAL MATH FOR ECONOMICS/Lecture, Discussion

This course introduces the mathematical tools used in economic analysis. After completing this course, the student should feel comfortable with the mathematical techniques likely to be encountered in an undergraduate economics program. Applications are drawn from a variety of fields within economics, but with particular emphasis on microeconomics. Prerequisite: Economics 010 and 011.
Staff/Offered periodically

176 COMPARATIVE ECONOMIC SYSTEMS/Lecture, Discussion

Examines the theory and practice of selective cases of capitalism, market socialism, and centrally planned socialism. Major topics include the welfare state and industrial democracy of Sweden, industrial policy and corporate groupings in Japan, workers' self-management in Yugoslavia, problems of centrally planned socialism, and the

problems of reforms in former Socialist countries. Prerequisite: Economics 010.
Mr. Hsu/Offered every year

177 JAPANESE AND CHINESE ECONOMIES/Lecture, Discussion
A comprehensive survey of the Japanese and Chinese economies—their development, institutions, and policies. Topics include historical background, agriculture, industrial organization and development, fiscal and monetary policies, employment and labor, U.S.-Japan economic relations. Prerequisite: Economics 010.
Mr. Hsu/Offered every year

205.1 MICROECONOMIC THEORY/Lecture, Discussion
Describes and analyzes how a market-oriented economy functions in answering the five basic economic questions. These are: (a) What commodities to produce? (b) How much of each to produce? (c) What productive techniques to use and how to provide incentive? (d) How to distribute the output among the various members of society? (e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that demonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors. Prerequisite: Economics 011.
Mr. Veendorp, Mr. Brown/Offered every semester

205.2 MACROECONOMIC THEORY/Lecture, Discussion
Focuses on the forces that affect the overall performance of the economy. A study of the determinants of economic activity (such as consumption, investment, government purchases, and exports) and measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level, and the nation's balance of international payments). Also deals with specific, current economic problems facing the United States and discusses public policies instituted to deal with them and the repercussions of some of these policies on world economies. Prerequisite: Economics 011.
Mr. Ferderer, Mr. Puffer/Offered every semester

207 INTERNATIONAL TRADE THEORY/Lecture, Discussion
Applies and develops concepts of economic theory to such topics as determinants of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues of international trade. Prerequisite: Economics 011 and 205.1.
Mr. Van Tassel/Offered every year

208 INTERNATIONAL MONETARY THEORY/Lecture, Discussion
This course studies the impact of international trade and investment on macroeconomic policy and problems of the international monetary system. Prerequisite: Economics 011 and 205.2 or 207.
Staff/Offered every other year

215 PUBLIC EXPENDITURES/Lecture, Workshop
Examines issues and priorities related to the size and composition of the federal budget and federal programs. Evaluation of federal budget expenditures and program levels according to criteria of cost-benefit analysis and cost effectiveness are carried out. Issues relating to private-public use of resources and how public policy affects these

uses are also examined. Prerequisite: Economics 011.
Ms. Ott/Offered every other year

216 TAX SYSTEMS AND POLICIES/Lecture, Workshop
Analyzes the federal tax system and U.S. tax policies. Explains emerging issues in federal taxation, including tax equity, the effect on income distribution, the relative tax burden of the rich and the poor, and alternative tax systems, as well as reform proposals to restructure the U.S. tax system. Tax incentives as a goal for economic growth are also discussed. Prerequisite: Economics 011.
Ms. Ott/Offered every other year

222 LABOR/Lecture, Discussion
Applies the concepts of labor supply and labor demand in a basic model of labor markets. The model is used to analyze the results of the labor market: wages, employment, and unemployment. The analysis is modified to allow for market imperfections and nonmarket forces, including trade unions and the government. Further topics are discussed, including wage discrimination and income inequality. Prerequisites: Economics 011 and 205.1 or permission of instructor.
Mr. Gray/Offered every year

223 CONTEMPORARY POLITICAL ECONOMY/Seminar
Examines the interaction of political and economic forces in evolving capitalist and socialist societies. Prerequisite: Economics 011.
Mr. Van Tassel/Offered every year

224 HISTORY OF ECONOMICS: ADAM SMITH AND OTHERS/Lecture, Discussion
Interdisciplinary. Travel in time through reading and discussion of the classics of economic thought. Participate in ancient, classical, and modern debates about human nature, commerce, and social classes; the virtue of spending and saving; and population, progress, property, and laissez-faire. Emphasis is on Adam Smith's *The Wealth of Nations* (1776). Others readings include Locke, Bentham, Malthus, Ricardo, Marx, and Keynes. Prerequisite: Economics 011.
Staff/Offered periodically

226 INDUSTRIAL ORGANIZATION/Lecture, Discussion
This course takes the concepts learned in Intermediate Microeconomic Theory to the next level. More complicated theories of firm behavior are examined. By allowing issues such as product differentiation and imperfect knowledge to enter the analysis, students gain access to more realistic views of industrial structure and performance. Practical applications of these theories can then be examined through the use of specific industry studies. Prerequisite: Economics 011.
Mr. Veendorp/Offered periodically

228 ECONOMIC DEVELOPMENT/Lecture, Discussion
Examines the major theories of economic development, the major problems confronting less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and investment, population, labor, and employment. Offered in alternate years with 128. Prerequisite: Economics 011.
Mr. Hsu/Offered every other year

242 EUROPEAN ECONOMIC HISTORY/Lecture, Discussion

This course applies the tools of economic analysis to help understand the major stages of European economic development, from the feudal economy to the European Economic Community. Primary emphasis is on the industrialization of Great Britain, Germany, France, and Russia, and the postwar restructuring of the European economy. Prerequisite: Economics 011.
Mr. Brown/Offered every year

243 AMERICAN ECONOMIC HISTORY/Lecture, Discussion

This course offers a comprehensive survey of the development of the United States economy from a colonial backwater to a leading industrial power. It emphasizes the use of economic reasoning to understand historical controversies such as the struggle over slavery, economic imperialism, and the causes of the Great Depression. Prerequisite: Economics 011.
Mr. Brown/Offered every year

244 EUROPEAN ECONOMY: EAST AND WEST/Lecture, Discussion

This course offers a critical examination of European approaches to economic policy. In the West, these include the modern welfare state (widely available health care and housing), a more heavily regulated labor market, and progress toward a common market and currency. In the East, governments relied upon on central planning and state ownership, even scoring some initial successes. Blending the tools of economic analysis with a close look at policies, this course will offer students an approach to answering these questions and an introduction to the economic challenges facing Western and Eastern Europe in the aftermath of the revolutions of 1989. Prerequisite: Economics 011.
Mr. Brown/Offered periodically

250 ECONOMICS OF SPORT/Lecture, Discussion

This course applies economic analysis to the sports industry. While the primary focus is on professional team sports, individual and "amateur" sports are covered as well. Labor relations, antitrust law, public subsidization of sports facilities, discrimination, and sports broadcasting are among the topics that are covered from an economics perspective. Prerequisite: Economics 011; Economics 160 recommended.
Mr. Puffer/Offered periodically

257 RESOURCE ECONOMICS/Lecture, Discussion

This course examines some of the issues associated with the economics of natural resources. Topics discussed are chosen from the following: the theory and analysis of renewable and nonrenewable resources, resource cartels, resource scarcity and the economy, and environmental economics. Topics are discussed at both theoretical and empirical levels. Proper policies are discussed to encourage resource conservation, the problems of common property resources, and the importance of resource scarcity to the economy. Prerequisites: Economics 011 and 205.1.
Ms.s. Eom/Offered periodically

271 INTRODUCTION TO MATHEMATICAL ECONOMICS/Lecture, Discussion

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: permission of instructor. Offered for variable credit.

Prerequisite: Economics 011.
Mr. Veendorp/Offered every year

273 FORECASTING/Lecture, Discussion
This course investigates a number of forecasting techniques commonly used in economic analysis. Among the techniques covered are time series analysis, econometric models, simulation models, and expectations surveys. Prerequisites: Economics 011 and 160 or equivalent.
Mr. Puffer/Offered periodically

277 URBAN ECONOMICS/Lecture, Discussion
Economic decisions made by firms and individuals regarding production, investment, and consumption activities inevitably involve a location decision. This course examines the implications of such location decisions for urban structure, urban and regional growth, and the existence of cities themselves. Topics include: location theory, interregional input/output tables, migration and regional growth. Prerequisite: Economics 011.
Mr. Brown/Offered periodically

282 HONORS
Students work on an individual basis with a faculty member on an intensive piece of research, culminating in an honors thesis. A student desiring departmental honors must register for one semester of Econ. 282 in the fall of their senior year. Prerequisite: Economics 011.
Staff/Offered every year

299.1 DIRECTED READINGS
Offered for variable credit.
Staff/Offered every year

299.2 DIRECTED RESEARCH
Offered for variable credit.
Staff/Offered every year

299.4 FIELD PROJECT
Offered for variable credit.
Staff/Offered every year

299.9 INTERNSHIP
Students spend a semester working full- or part-time outside the University as part of their academic experience. To qualify, the internship experience must significantly involve an extension, embodiment, or illustration of previous or concurrent, systematic academic work in economics. Offered for variable credit. This course does not count toward the economics major.
Staff/Offered every year

The following courses are normally open only to graduate students:

300 INTRODUCTION TO GRAD ECONOMICS THEORY
Staff/Offered every year

301.1 MICROECONOMICS/Seminar
Mr. Veendorp/Offered every other year

301.2 MICROECONOMICS/Seminar
Mr. Brown/Offered every other year

302.1 MACROECONOMICS/Seminar
Ms. Ott/Offered every year

302.2 MACROECONOMICS/Seminar
Mr. Ferderer/Offered every year

313 MONETARY ECONOMICS/Seminar
Mr. Ferderer/Offered periodically

325 PUBLIC FINANCE/Seminar
Ms. Ott/Offered periodically

326 INDUSTRIAL ORGANIZATION/Seminar
Mr. Veendorp/Offered periodically

327 INTERNATIONAL ECONOMICS/Seminar
Staff/Offered periodically

328 ECONOMIC DEVELOPMENT/Seminar
Mr. Hsu/Offered periodically

333 HEALTH ECONOMICS/Seminar
Mr. Eze/Offered periodically

355 ENVIRONMENTAL ECONOMICS/Seminar
Ms. Eom/Offered periodically

365 BASIC ECONOMETRIC THEORY/Lecture
Qualified undergraduates may take Economics 365 with the instructor's permission.
Staff/Offered every year

366 APPLIED ECONOMETRICS/Seminar
Mr. Gray/Offered periodically

Education

DEPARTMENT FACULTY

Sarah Michaels, Ph.D., *chair:* language, culture, and schooling; discourse analysis; literacy studies

David K. Dickinson, Ed.D.: literacy development, classroom interaction, home-school relationships

Sharon Griffin, Ph.D.: emotional development, cognitive development, mathematics education

David S. Zern, Ph.D.: cognitive development, socialization, values and education, religiosity and education

PART-TIME FACULTY

Barbara S. Berka, M.A.: elementary science education

Marilyn F. Engelman, Ph.D.: psychoeducational assessment

Susan J. Fisher, M.A. in Ed.: young children and the arts

Patty Jacobs, M.S. in Ed.: creative arts

Kenner H. Myers, M.S. in Ed.: early childhood education

Nathaniel C. Seale, M.Ed.: human services and psychoeducation

Susan D. Starr, M.Ed.: elementary education

AFFILIATE FACULTY

Ronald K. Goodenow, Ph.D.: information technology, international education, urban education

Mauri Gould, B.A.: science education

EMERITI

Helen J. Kenney, Ed.D.: curriculum development, instructional theory, psychoeducation, evaluation

William C. Kvaraceus, Ed.D.: measurement, social deviance

JACOB HIATT CENTER FOR URBAN EDUCATION

The Jacob Hiatt Center for Urban Education represents a permanent partnership between Clark University and the Worcester Public Schools, dedicated to rethinking the challenges and possibilities of contemporary urban schools. The center brings together teachers, administrators, researchers, and students in collaborations that foster interdisiciplinary and innovative ways of thinking about education in a rapidly changing world. The center supports a program for the development of teachers as teacher/researchers and educational leaders, as well as an innovative undergraduate and graduate program in education. The Hiatt Center seeks to set a new vision and standard for urban education nationwide.

HIATT CENTER PRINCIPALS AND SCHOOL-UNIVERSITY LIAISONS

John Durkin, superintendent, Worcester Public Schools

Thomas Friend, deputy superintendent for education/research and development

Gale Hilary Nigrosh, development specialist for higher education and business partnerships

John Bierfeldt, principal, Arthur F. Sullivan Middle School

Tony Caputo, principal, Jacob Hiatt Magnet School

James Garvey, principal, South High Community School

Joan Merrill, principal, The Goddard School of Science & Technology

Carol Shilinsky, principal, The Accelerated Learning Laboratory at Woodland

UNDERGRADUATE PROGRAMS

The Education Department believes that a broadly based grounding in the liberal arts is essential to the preparation of excellent teachers. Students do not major in education; rather, in conjunction with an academic major, they take sequences of courses and associated field experiences that prepare them to teach or to work in other human service settings. These sequences form an area of concentration that complements a student's academic major.

Teacher Preparation Sequences

Undergraduate programs are designed for students interested in preparing for teaching careers in public and private schools. While special attention is given to urban schools, students have experiences in a variety of school settings.

Participation in teaching certification sequences is limited to students who maintain a satisfactory level of scholarship in their general programs of studies and who perform acceptably in the academic and field-based courses in the education sequence. Only those students who are making satisfactory progress are accepted into the final practicum experience. The decision to enter one of the sequences must ordinarily be made by the sophomore year. Students interested in a teaching career are encouraged to consult with the undergraduate program coordinator at the earliest possible date to discuss their overall program planning. Due to the implementation of new state certification guidelines in 1994, these programs are undergoing changes. These changes make it especially important that interested students contact the department early in their academic career and consult with the department throughout their program of studies.

The Teacher Sequences include:

259 HISTORY, SOCIETY, AND SCHOOLS/Seminar
Refer to description under PSYCH 265, *Cultural Identity and Nation-State.*
Wertsch/Offered periodically

275 LANGUAGE AND SCHOOLING/Lecture, Discussion
This course examines a variety of "sociolinguistic" perspectives on language and their relationship to the practices and outcomes of schooling in this society, with an emphasis on interactional sociolinguistic approaches. We discuss the various "schools," theoretical assumptions, methods, and research concerns, attempting wherever possible to ground our discussions in actual analyses of talk and text in educational settings. Topics include language and social class, language and culture, language socialization at home and school, and language in the classroom. Throughout, special attention is paid to the issue of literacy development and differential access to learning opportunities in multiethnic educational settings.
Staff/Offered periodically

277 LANGUAGE, DISCOURSE, AND LITERACY/Lecture, Discussion
This course treats oral language, writing, and reading not as monolithic skills but as multiple and complex activities related to particular communities of practice. These literacy practices have varied across history and, today, vary across cultural groups and school settings. Approaches to discourse analysis from different disciplines are introduced. These tools are used to understand cross-cultural communication and sociocultural processes related to learning in a culturally diverse society. This course constitutes an introduction to educational linguistics.
Staff/Offered periodically

278 SOCIAL COGNITION AND SCHOOLS/Lecture, Discussion
This course deals with the dynamic relationships between mind and society, as well as between language and culture. Studies of socially distributed cognition and the sociohistorical construction of knowledge and belief are introduced as ways to understand learning inside and outside schools. Pedological principles and practices are also explored. The course serves as an introduction to contemporary issues in cognitive science as applied to theories and practices in education.
Staff/Offered periodically

329 PROSEMINAR IN EDUCATION/Seminar
This course is designed for first-year graduate students in the Education Department. It exposes students to a range of issues of current importance to educators, introduces students to central faculty members in the department, provides a forum for students to formulate and exchange ideas, and supports students as they begin to engage in research.
Staff/Offered every year

388 GRADUATE INTERNSHIP MODULE IN ELEMENTARY EDUCATION (see description under 288.1-.4)

388.1 Practicum/Field Placement

388.2 Critical Issues in Elementary Education/Seminar

388.3 Individualized Instruction and the Integrated Curriculum/Lecture, Discussion

388.4 Creative Arts and Education/Workshop
Staff/Offered every year

Early Childhood Education

The early childhood education sequence leads to Massachusetts Office for Children approval for teaching in daycare and preschool settings.

Elementary Education

The elementary education sequence prepares students to work with children in the elementary-level grades (1-6). This program carries approval by Massachusetts and by the Interstate Certification Compact as well as a reciprocity agreement by thirty-one other states and the District of Columbia.

Secondary Education

Preparation for students to teach at the secondary level in a variety of disciplines is available. This preparation requires students to have a strong background and training in an academic discipline.

Human Services Preparation Sequences

The department also offers two sequences that prepare students for work in schools in nonteaching capacities and for careers in various human service-oriented settings:

The Human Services Sequence

The Human Services Sequence is a four-credit sequence that includes a two-semester field experience. It is designed for students interested in pursuing careers and/or graduate study in education and related professional fields, such as social work, rehabilitation, counseling, and guidance. Students' course work and field experiences deal with diverse groups including children, families, and the aged in such settings as schools, the court system, mental health agencies, and correctional and rehabilitation institutions. Students acquire conceptual as well as experiential skills through a balance of study and applied field work. Students completing this sequence will receive an official transcript notation stating the completion of this sequence.

School Psychology Sequence

The School Psychology Sequence is a four-credit sequence that provides intensive first-level training for juniors and seniors who are considering advanced graduate work in school psychology and related professional fields. Students are required to complete a two-semester placement for ten hours a week under the supervision of a school psychologist and/or a school adjustment counselor. Students completing this sequence receive an official transcript notation stating the completion of this sequence.

GRADUATE PROGRAMS

The Department of Education is part of the Frances L. Hiatt School of Psychology and the newly established Jacob Hiatt Center for Urban Education. Activities sponsored by the Hiatt School enrich the functioning of the department and support a developmental emphasis in its programs.

The department offers a program leading to the degree of master of arts in education, as well as a program leading to the degree of doctor of education. Both programs may be pursued on a full-time or part-time basis. In conjunction with the master of arts degree program, students may obtain certification in elementary or secondary education.

MASTER OF ARTS IN EDUCATION

This degree program is designed for professionals currently in the field who wish to extend their skills and for those who want to prepare for eventual study at the doctoral level. The program may be used to enrich general theoretical background relevant to a candidate's area of educational practice and to develop new professional skills. Master's candidates center their work in areas where there is depth in course offerings through the resources of the Department of Education and cooperating academic departments in the University. Individuals with a bachelor's degree in another field who wish to enter the teaching profession may complete a certification sequence as part of their program of study.

Admission Requirements

General Graduate School admission requirements apply.

Degree Requirements

The course of study consists of a minimum of eight full course units with an additional requirement to be completed by one of the following options: (1) an acceptable thesis; or (2) two additional full courses; or (3) the master's seminar, in which an independent major paper is prepared and presented to fellow graduate students and members of the faculty. The passing of a final oral examination is required of all candidates.

DOCTOR OF EDUCATION

The doctor of education program is an organized course of study and research fostering the achievement of advanced competence in theories, practices, and skills relevant to education. It is designed for experienced practitioners seeking highest-level training and for those preparing for careers in institutions of higher learning. A master's degree is required for admission to the program.

All doctoral students complete a core curriculum aimed at imparting a solid understanding of the analytic techniques; the research methods; the cultural, social, and psychological influences; and the pedagogical principles and practices that will prepare them to contribute to the development of new solutions to significant problems in education. Advanced courses offered in the Education Department and in other departments in the University (e.g., Psychology, Management) permit students to round out their programs of study to suit their individual interests and career goals.

During the first two years, in addition to course work, students complete four papers to qualify for further doctoral study. Participation in ongoing faculty research is strongly encouraged. Working with an advisor, a student then prepares a dissertation proposal and defends it before a faculty committee. The conduct of the proposed research and its presentation in an acceptable dissertation complete the doctoral program.

A small, select group of graduate students ensures the advantages of program flexibility and close contact between faculty and students. Programs of study are individualized within the constraints of core requirements and departmental, University, and field resources.

Admission and Degree Requirements

Contact Department of Education, Secretary to the Chair, at (508) 793-7221.

COURSES

152 COMPLEXITIES OF URBAN SCHOOLING/Lecture, Discussion

Analysis of current challenges facing educators in America's urban schools using linguistic, sociological and psychological perspectives. Examination of educational approaches that have proven successful in areas that may include school management, classroom organization, curriculum, instruction, evaluation, and community-school relationships. Required of students in the elementary certification sequence.
Mr. Dickinson/Offered every year.

155 EDUCATION AND SOCIAL POLICY/Lecture, Discussion

Examines the relationship between social problems, social policy, and education.

Conceptual tools for the analysis of social policies are utilized. Examinations of existing programs and social agencies enable students to understand agency functions, client population, and the relationship between the individual agency and the larger social service network. Emphasis is placed on: social problems and "social solutions," linking individuals and external primary groups with societal resource systems, and the impact of social policy change on individuals and institutions.
Mr. Seale/Offered every year

190 THE EXPERIENCE OF ADOLESCENCE/Lecture, Discussion

Explores adolescent development through theory and research drawn from the behavioral and social sciences and including some fiction as well. Students study and discuss topics of central importance to education during the adolescent years. Special social and interpersonal problems and issues confronting today's adolescent are considered, as well as relevant teaching and learning theories. Students apply the course material to both teachers and students in descriptive and analytic reports.
Mr. Zern/Offered every year

194-195 FIELD EXPERIENCE: SPECIAL EDUCATION AND HUMAN SERVICES/ Discussion, Field Placement

These courses provide direct, supervised experience within a wide range of educational and human services agencies. Placements are based upon assessment of students' experience, goals, and academic backgrounds. Placement possibilities include schools, mental health centers, institutions, the courts, substance abuse centers, crisis agencies, and group homes. A concurrent weekly seminar provides the opportunity for students to analyze their field work experience. *Special note:* These courses may be taken as a full-year, two-course sequence (Education 194 *and* 195) or as a single course either semester (Education 194).
Mr. Seale/Offered every year

230 THE INSTRUCTIONAL PROCESS/Lecture, Seminar

Examines the goals and underlying values of the school experience with particular reference to the theoretical and empirical literature relevant to the role of the teacher, instructional theory, and evaluation of learning. Various teaching models, traditional and contemporary, are analyzed and critiqued. Classroom observations are required.
Staff/Offered every year

246 HISTORY OF AMERICAN HIGHER EDUCATION/Seminar

Refer to course description under History 246.
Mr. Koelsch/Offered every year

252 YOUNG CHILDREN AND THE ARTS/Lecture, Discussion, Studio

The development of children's abilities to express themselves through varied symbolic forms is examined. There also is studio time during which students are asked to express themselves using different media. Classroom instructional applications at the early childhood and elementary levels are explored. No prerequisites.
Ms. Fisher/Offered periodically

254 DISCOVERING PHYSICS/Laboratory

Refer to course description under Physics 102. Education 254 is open to education graduate students only. Undergraduate students need to register for Physics 102.
Mr. Blatt, Mr. H. Gould, Mr. M. Gould/Offered every year

260 LITERACY DEVELOPMENT/Lecture, Discussion, Seminar

Provides an overview of the development of reading, writing, and literacy-related oral language abilities from the preschool years through high school. Linkages between oral and written skills and between reading and writing are examined.Special attention is given to the impact of cultural, home, and instructional experiences on literacy skills.
Mr. Dickinson/Offered every year

261 DEVELOPMENT OF A SENSE OF SELF/Seminar

Stages in the development of an adult sense of self are examined by adopting three assumptions: (a) one's sense of self is constructed; (b) it includes both cognitive and affective components; (c) it is formed in the context of interpersonal relations. A constructivist theory (Case) provides an integrating framework for a critical review of diverse theories (Kegan, Fast, Erikson, Higgins) and research findings on this topic. Emotion possibilities and vulnerabilities inherent in each successive sense of self are considered, and selected research on self-conscious emotions (pride, shame, guilt) reviewed. Educational implications also are discussed.
Ms. Griffin/Offered every year

262 HISTORICAL AND CULTURAL PERSPECTIVES ON LITERACY/Lecture, Discussion

Throughout history, numerous claims have been made about the impact of literacy on culture, discourse, and cognition. This course examines the role of literacy during different historical periods, including early Greece, the Industrial Revolution, and the twentieth century. Literacy is viewed as a culturally and historically conditioned tool that takes many forms, serves multiple functions, and has an important effect on individuals' opportunities in society.
Staff/Offered periodically

263 DISEQUILIBRIUM AS A FACILITATOR OF THE EDUCATION PROCESS/Lecture, Discussion, Seminar

A consideration of the manifold guises of guidance and/or pressure, and their positive influence on the nature of cognitive and emotional development. The value of inducing disequilibrium as a stimulus to the education of individuals and groups is treated from a large variety of theoretical perspectives (including that of psychoanalysis, Piaget, psychological anthropology, F. Kluckhohn, biology, and religion).
Mr. Zern/Offered periodically

264 DESIGNING INSTRUCTION FOR THE DEVELOPMENTAL NEEDS OF THE CHILD/Lecture, Discussion, Class Exercises

Lectures and classroom exercises are used to (1) examine some central knowledge structures children acquire during the preschool and elementary years and the ways these structures influence school learning; (2) examine the ways these structures develop and the forms they assume for typical and atypical children; and (3) provide opportunities for students to develop skills in developmental assessment and instructional programming. In course exercise and assignments, students use their understanding of children's development to design classroom and remedial learning activities that meet children's individual needs.
Ms. Griffin /Offered every year

265 EMOTIONAL DEVELOPMENT/Seminar

This course examines what emotions are placed and how they develop from birth to adulthood. Particular emphasis is placed on emotional development during the childhood years; on the ways emotions are shaped by cognitive, social, and biological factors; and on the ways emotions themselves shape learning and behavior.
Ms. Griffin/Offered every year

266 PSYCHOEDUCATIONAL ASSESSMENT METHODS/Lecture, Discussion, Practicum

The goal of this course is for students to become thoroughly familiar with the theory of assessment, the tools used for assessments, and the use of assessment data. Focus is placed on understanding, administering, and interpreting both formal and informal assessment tools, including tests of cognitive ability, scholastic achievement, and perceptual abilities. Students are required to administer several test batteries and to write case histories.
Ms. Engelman/Offered every year

268 PSYCHOEDUCATIONAL PRACTICUM AND SEMINAR/Seminar, Field Placement

This field-based course provides a two-semester placement, eight to ten hours a week, with the pupil personnel department of a public school system. Each student is placed with a school psychologist and/or a counselor who functions as an ongoing supervisor. Practicum activities include supervised experience in conducting and interpreting psychoeducational assessments, obtaining social and developmental history information through home visits, and observing and participating in the development of individualized educational plans as part of the team evaluation process.
Mr. Seale/Offered every year

269 THE SKILLED HELPER/Lecture, Discussion, Practicum

An introductory experience designed for the development of the helping professional. Emphasis is placed on: dynamics of the helping relationship and basic interviewing skills Class exercises are utilized to facilitate skill development. Students who are not concurrently taking a field course are placed in a human service agency one half day per week.
Mr. Seale/Offered every year

271 FIELD EXPERIENCE SECONDARY SCHOOLS/Seminar, Field Placement

A field-based introduction to methods of teaching in the secondary school. Students work in a classroom to learn about planning instruction and managing classrooms. Differences and needs of individual students are emphasized. The course consists of (1) a field component of five hours per week and (2) a weekly seminar.
Staff/Offered periodically

276 LEARNING TO TEACH IN A DISCIPLINE

Major focus of the course is on observing extensively and intensively in a high school in the subject area in which the student wishes to teach. Assignments focus on the nature of the teaching experience, including journals, lesson plans, and focused analyses of different dimensions of the teaching process. Either tutoring or occasional whole class teaching also are required. This course is part of required sequence to acquire certification to teach at the high school level. The course begins with the acquisition of a scheme for organizing and analyzing values.Focus then shifts to an

understanding of the role that values play in the socializing of the next generation according to a variety of perspectives in the social sciences, both in terms of cognitive development and interpersonal interaction. A special section is devoted to the example of religious values. Applications of the model and/or various theories are examined systematically in the "real" world.
Mr.Zern/Offered every year

280 FIELD EXPERIENCE IN THE ELEMENTARY SCHOOL/Seminar, Field Placement
Provides an initial experience in the elementary classroom and an introduction to the elements of teaching: curriculum planning, instructional strategies, classroom management, etc. Students spend five hours per week in an assigned classroom, assisting the teacher and working with small groups of children. In teams, students develop and teach a unit of instruction. A weekly seminar addresses classroom experiences and considers issues relating to multicultural and special needs students in the regular school setting.
Ms. Starr/Offered every semester

281 THE EARLY CHILDHOOD EDUCATOR: THEORY AND PRACTICE/Seminar, Field Placement
This course introduces students to early childhood education. Each student spends six hours a week in a field placement and attends a weekly two-hour seminar. Daycare centers, nursery schools, and kindergartens are considered field sites. Seminar sessions address the nature of the developing child from infancy to age eight, the early childhood curriculum, the role of the teacher, and the effects of family and society on the learning child.
Ms. Myers/Offered every year

282 ARTS IN THE INTEGRATED CURRICULUM/Workshop, Discussion
Through workshop experiences, students are introduced to using the arts as part of integrated units. Techniques are introduced for using varied art forms in classroom settings including music, drama, poetry, visual arts, and children's literature. Through development and implementation of an integrated unit in a field setting, students experience using selected art forms in classrooms. This course typically is taken concurrently with Ed 283 and Ed 284; the three hours of field hours per week are shared among all three courses. Prerequisite:Ed 280 or Ed 281.
Ms. Jacobs/Offered every fall

283 SOCIAL STUDIES IN THE INTEGRATED CURRICULUM/Lecture, Workshop, Discussion
Students are introduced to the range of subjects typically part of social studies programs in elementary school. Workshops cover geography, history, approaches to fostering self concept, and cooperative learning techniques. Students develop integrated units and implement them in their field settings. This course typically is taken concurrently with Ed 282 and Ed 284; the three hours of field work per week are shared among all three courses. Prerequisites: Ed 152, 280 or 281.
Ms. Myers/Offered every fall

284 FOSTERING LITERACY IN AN INTEGRATED CURRICULUM/Lecture, Discussion, Seminar
Provides an introduction to aspects of reading and writing development to enable

students to understand the rationale for current methods for supporting literacy development. Methods for supporting decoding, reading comprehension, and techniques for fostering writing development in the context of an integrated curriculum are introduced and used in field settings. Informal assessment, parental involvement, and the impact of cultural differences on classroom discourse also are addressed. The class typically is taken in conjunction with Ed 281 and 283; the three hours of field work per week, which are shared among all three courses, must include at least one hour in the morning. Prerequisites: Ed 152, Ed 280.
Mr. Dickinson/Offered every fall

285 CONNECTIONS BETWEEN FAMILIES AND SCHOOLS/Lecture, Workshop, Discussion, Seminar

Workshops introduce issues related to physical and emotional health facing urban families and the impact of these factors on childrens' school experiences.The importance of creating school-home partnerships is stressed and strategies are examined for enhancing parental support for children's academic growth. This class typically is taken concurrently with Ed 286 and 287; three hours of field work per week are shared among all three classes. Prerequisites: Ed 152, Ed 280.
Staff/Offered every spring

286 SCIENCE IN THE INTEGRATED CURRICULUM/Workshop, Discussion

Workshops explore appropriate science content for elementary school science programs and approaches that enable children to become actively involved in scientific investigations. Use of low-cost, hands-on equipment and integration between science, mathematics and other curriculum areas are encouraged. This class typically is taken concurrently with Ed 285 and 287 with the three field hours being shared among all three courses.
Ms. Berka/Offered every spring

287 CURRICULUM AND INSTRUCTION IN MATHEMATICS/Lecture, Discussion, Field Placement

Designed to give students a working knowledge of (1) the manner in which mathematical understanding develops across the preschool and elementary years, (2) instructional techniques and curriculum materials to foster this development in the classroom, and (3) methods to assess learning outcomes and teaching effectiveness and (4) recent research on mathematics learning and teaching. Twenty hours of field experience are required.
Ms. Griffin/Offered every year

288 INTERNSHIP MODULE IN ELEMENTARY EDUCATION

This integrated internship provides an intensive experience in elementary schools (grades 1-6) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The elementary module provides credit in the following areas:
288.1 Practicum/Field Placement
288.2 Critical Issues in Elementary Education/Seminar
288.3 Individualized Instruction and the Integrated Curriculum/Lecture, Discussion
288.4 Creative Arts and Education/Workshop
In addition to the 288 sequence, workshops in health and physical education for elementary school children are required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the

internship module.
Ms. Myers, Staff/Offered only Fall 1992 and Spring 1993 (not offered 1993-94)

289 INTERNSHIP MODULE IN EARLY CHILDHOOD EDUCATION

Provides an intensive experience in the early school grades (K-3) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The early childhood module provides credit in the following areas:

289.1 Practicum/Field Placement
289.2 Critical Issues in Early Childhood Education
289.3 Individualized Instruction and the Integrated Curriculum/Lecture, Discussion
289.4 Creative Arts and Education/Workshop

In addition to the 289 sequence, workshops in health and physical education for young children are required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.
Ms. Myers, Staff/Offered every year

299.1 DIRECTED READINGS - UNDERGRADUATE

Independent study for qualified students on a selected topic. Permission of instructor required. Offered for variable credit.
Staff/Offered every year

299.4 FIELD PROJECT - UNDERGRADUATE

Provides individualized and extended experiences in a wide variety of educational and human service agencies and institutions. Supervision is provided by the University and field agency personnel. Combines related seminars, conferences, and readings as a basis for critical analysis of the experiences within the context of applied theory and practice. Offered for variable credit.
Staff/Offered every year

304 TEACHING AS RESEARCH SEMINAR I (Fall)
305 TEACHING AS RESEARCH SEMINAR II (Spring)

These seminars, meeting on a continuing basis, bring together urban school teachers (at the elementary, middle, and secondary level) with graduate students and faculty involved in university-based educational research. The focus of discussion and reading is qualitative, sociolinguistic research in classrooms, emphasizing the study of talk and texts, as a vehicle for 1) better understanding students' understanding, 2) developing systematic techniques for describing and critiquing classroom activities, and 3) supporting change in the classroom that promotes more effective learning among a socioculturally diverse population of students. Participants meet in small, facilitated groups to carry out qualitative research in urban classrooms and develop forums through which their work can be disseminated to a wider community of teachers and researchers.
Staff/Offered every year

306 CREATING LITERACY ENVIRONMENTS IN ELEMENTARY SCHOOLS/ Seminar

This course, designed for classroom teachers and full-time students, reviews recent studies reporting efforts to establish classrooms rich with varied opportunities for

children to use language and literacy. Implications of this research for instruction are considered, and classroom practice is examined in light of it. Teams of students (e.g., a classroom teacher and a full-time graduate student, or two classroom teachers) identify and examine issues related to language and literacy use in classroom practice. Those who are interested try novel methods and examine the effects of these innovations.
Mr. Dickinson/Offered periodically

308 PSYCHOLOGICAL PRINCIPLES APPLIED TO EDUCATION AND TEACHING/ Lecture, Discussion

An analysis of a number of major psychological theories is made. Each model is then applied to educational issues of particular relevance to the students. Assignments also focus on succinct applications to educational themes. Considers such theorists as Freud, Skinner, Piaget, R. White, Rogers, and Wertheimer.
Mr. Zern/Offered every year

330 EARLY CHILDHOOD INTERVENTION PROGRAMS/Seminar

This course examines approaches to supporting the development of children during the early childhood years. Topics to be considered include examination of Head Start and other major federal programs such as Even Start, as well as programs attempting to increase parents' support for their children's educations. The emphasis is on intervention programs and research projects currently being funded by the federal government.
Mr. Dickinson/Offered every other year

335 ETHNOGRAPHY IN URBAN EDUCATIONAL AND COMMUNITY SETTINGS

This course is an introduction to ethnography and qualitative research methods—at both a theoretical and applied level. Students are introduced to the epistemological and sociohistorical underpinnings of qualitative methods, with emphasis on work appropriate for the study of urban settings. Students also carry out their own ethnographic studies, involving them in the practical work of negotiating entry into the field, data collection, and analysis. In providing methodological tools for ethnographic research, there is an emphasis on the study of discourse (talk and text) in these settings, as the visible nexus of social, cognitive, and institutional forces. This is a graduate seminar, requiring approval of the instructor.
Ms. Michaels/Offered every year

343 ANALYSIS OF THE RESEARCH PROCESS/Lecture, Discussion

Focuses on understanding the structure and intent of a research report. The form of the course consists of the careful analysis of existing educational research. Sources are considered in terms of particular elements in their overall structure, including hypothesis formation, operationalization of major terms, research design, etc.
Mr. Zern/Offered periodically

350 EDUCATIONAL PROCESSES IN THE SCHOOL AND HOME/Seminar

This course reviews research on classroom processes, focusing on work dealing with classroom discourse from sociolinguistic, ethnographic, and Vygotskian perspectives. Research dealing with language usage in the home and work on home-school relationships also are discussed. The course operates as an advanced seminar. Students may conduct original research using the instructor's data, using data they

collect, or they may do a library research project.
Mr. Dickinson/Offered every other year

371 THESIS RESEARCH
Individual research related to the doctoral dissertation. Students meet with members of their dissertation committee for assistance with their dissertation study. Advising conferences are scheduled as needed by the individual student with committee members. The chair of the dissertation committee coordinates the advising process. Offered for variable credit to be determined by the dissertation chair.
Staff/Offered every year

380 DEPARTMENTAL MASTER'S SEMINAR/Presentations, Discussion
Designed for master's degree candidates who are not writing a thesis. Requires a major analytic paper on a significant educational problem or issue, which may include an empirical or practical component. Students meet individually and in small groups to develop a topic focus and to discuss relevant research and professional literature.
Staff/Offered periodically

383 HUMANITIES SEMINAR: LEARNING AND KNOWING/Lecture, Discussion
An interdisciplinary study of the variety of ways we learn and know. The focus is a consideration of the various and often conflicting views of the ideal of the educated person.
Mr. Overvold/Offered every year with COPACE

399.1 DIRECTED READINGS - GRADUATE
Independent critical analysis of literature related to individual research. Offered for variable credit.
Staff/Offered every year

399.2 DIRECTED RESEARCH - GRADUATE
Individual research with direction from an instructor. Offered for variable credit.
Staff/Offered every year

Engineering

PROGRAM COMMITTEE

Roger P. Kohin, B.S.E.E. Ph.D., *committee chair,* physics
Lee Rudolph, Ph.D., mathematics, computer science
Wen-Yang Wen, Ph.D., chemistry

THE UNDERGRADUATE 3/2 ENGINEERING PROGRAM

The 3/2 Engineering Program at Clark University is a five year program offered in conjunction with the College of Engineering and Applied Science at Columbia

University. Students complete the first three years at Clark followed by two additional years at Columbia. At Clark, students major in a field that strongly overlaps the entrance requirements for Columbia's engineering school. Students completing the program receive an A.B. degree from Clark and a B.S. in engineering from Columbia.

Appropriate majors at Clark include chemistry; computer science; environment, technology, and society; mathematics; physics; and a self-designed liberal arts/engineering major. At Columbia, students may major in any of the engineering fields offered, viz.: applied geophysics, applied mathematics, applied physics, bioengineering, biomechanics, chemical engineering, civil engineering, computer science, electrical engineering, engineering mechanics, industrial engineering, metallurgy and materials science, mechanical engineering, mineral engineering and chemical metallurgy, mining engineering, nuclear engineering, and operations research.

The program is open to all Clark students, however, the required curriculum must be started during the first year of study to permit the timely completion of all requirements. Those students whose high school background (as determined by placement examinations) has not prepared them to enter calculus (Mathematics 120) and composition (English 020) during their first semester must attend summer school to complete these requirements on time. All students intending to pursue the program are required to notify the program chair of their intent at the beginning of their first year and to choose their courses each semester in consultation with committee members.

Students are encouraged to seek a major advisor who is familiar with the program and to seek the advice of members of the 3/2 engineering committee. Sample curricula for appropriate majors can be obtained from the committee chair. Students intending a self-designed liberal arts/engineering major may wish to use the 3/2 Engineering Committee as their major advisory committee.

REQUIREMENTS

In addition to the requirements of the Program of Liberal Studies and of the major field at Clark, indicated elsewhere in this catalog, students must meet the entrance requirements for the School of Engineering and Applied Science at Columbia University by the end of the third year. These requirements vary slightly depending on the intended engineering field but the following courses are required for all students except as indicated. See the committee chair for exceptions and for detailed guidelines.

Columbia entry requirements	Clark equivalent
Mathematics	
Calculus (4 terms)	Math 120/121/130/131
Ordinary Differential Equations	Math 244
Physics	
General Physics (3 terms)	Phys 110.2/112/113
Modern Physics (for most majors)	Phys 114
Chemistry	
Chemistry with lab (2 terms)	Chem 101/102
Organic or Applied Chemistry (some majors)	Chem 130/131
Computer Science	
Fortran	CSci/Phys 115
or Pascal	CSci 101 or 115
English	
Composition (one term minimum)	Eng 019 or 020

Literature, Philosophy, History, Culture Studies	
Two terms minimum	Most CP, HP, and VP courses
Economics	
One term minimum	Econ 010
Art or Music History	
One term minimum	Art101/Mus011/012/013/014
Physical Education	
Two terms or team participation	Any team athletic sport is acceptable

The additional Clark requirements for the liberal arts major and for the Program of Liberal Studies must be met concurrently with the above requirements. Several majors require additional summer school work at Clark or advanced placement standing to complete all requirements within the three year period in residence at Clark. Students who complete a full year of study at Columbia and who have completed all of Clark's requirements are eligible for the A.B. at the end of the fourth year of study.

ENROLLMENT AT COLUMBIA

Students submit a formal application for admission to Columbia University through the 3/2 engineering committee during their junior year. Students receiving a positive endorsement from the committee normally can expect admission to Columbia for enrollment as juniors in the following September. Application for financial aid at Columbia is made at the same time, and those students receiving financial aid can expect to be supported by Columbia at levels that are generally consistent with the level of Clark's support during the first three years. Columbia does not normally award financial aid to foreign students, who must rely on other sources of funds.

English

DEPARTMENT FACULTY

Serena S. Hilsinger, Ph.D., *chair:* modernist literature, women writers

Thomas F. Berninghausen, Ph.D.: American literature, modernism, literary theory

Charles S. Blinderman, Ph.D.: science and literature, Victorian literature, etymology

John J. Conron, Ph.D.: American literature, American landscape, American culture, fine arts

James P. Elliott, Ph.D.: American literature, literary theory, textual editing

SunHee Kim Gertz, Ph.D.: Chaucer, medieval literature, literary theory

Fern Johnson, Ph.D., *provost:* sociolinguistics, feminist linguistics, communication

Leone Scanlon, Ph.D., *director of writing center:* composition

Stanley Sultan, Ph.D.: modernist literature, literary theory, Anglo-Irish literature

Virginia M. Vaughan, Ph.D.: Shakespeare, Renaissance drama, Renaissance poetry and prose

David F. Venturo, Ph.D.: English literature, 1660-1830; history and literature

ADJUNCT FACULTY

William Ferguson, Ph.D., associate professor of Spanish

Bernard Kaplan, Ph.D., professor of psychology

PART-TIME FACULTY

Anne Goble, M.A.

Paul Wilkes, M.S.

EMERITI

Karl O.E. Anderson, Ph.D.

William H. Carter Jr., Ph.D.

Jessie C. Cunningham, Ph.D.

UNDERGRADUATE PROGRAM

The English program is designed to meet the needs and interests of nonmajors as well as majors. We aim to assist all students in developing skills in close reading, critical thinking, and effective writing, as well as in acquiring knowledge and experience valuable to any vocation. The program encourages the development of a sense of cultural history, a sensitivity to literary values, and a firsthand knowledge of important authors, works, and periods of literature in English.

During the first year, the prospective English major may wish to take, or to begin, a two-semester historical sequence. These include *English Poetry* (110-111); *English Drama* (122-123); *English Fiction* (131-132); *Fiction by Women Writers* (133-134); and *Major American Writers* (180-181). In the sophomore year, English majors normally continue their work in these historical overviews. Also during this year, the student selects–in consultation with an advisor and other appropriate members of the staff–a suitable area of specialization. An area of specialization, a required part of the English major, permits each student to choose from a wide variety of recommended courses, both inside and outside the English Department, that are related to the particular periods, themes, or activities appropriate to the student's special interests. The department encourages extensive and intensive consultation between majors and their advisors.

The basic program summary for all English majors follows; it should be noted that some courses fulfill more than one requirement and that some courses may be taken at Assumption College and the College of the Holy Cross, through an arrangement with the Worcester Consortium for Higher Education.

The English Department is part of the Alice Coonley Higgins School of Humanities.

SUMMARY PROGRAM FOR ENGLISH MAJORS

Nonrequired Preparatory Courses include:

IDND 015 *English Writing/Workshop*
IDND 018 *Expository Writing /Workshop*
019 *The Essay: Reading and Writing/Workshop*
020 *Introduction to Literature and Composition*

General Requirements:

A. 110 *English Poetry I*

B. *Two* of the following four historical groupings of courses:
110-111, *English Poetry I & II*;
122-123, *English Drama*;
131-132, *English Fiction;* or 133 *Fiction by Women Writers, 1688–1899,* and 134 *Modern Fiction by Women Writers*;
180-181, *Major American Writers*

C. *One* 200-level seminar in criticism from the following:
241 *Mythopoetic Mode*; 244 *Interpretation of Dreams and Other Products of the Imagination;* 245 *The Creative Process;* 246 *Psychology, Literature, and Language;* 247 *Symbolization and Symbolic Action;* 248 *Contemporary Literary Theory;* 249 *Signs and Crossroads: Semiotic Theory and Practice;* 264 *Rise of the Sublime;* 281 *American Literary Renaissance;* 340 *Introduction to Graduate Study in English;* 251, *Seminar in Literary Criticism* (refer to course description 251, under Comparative Literature).

D. Period Requirements:
To develop greater historical perspective and awareness of the range and variety of literature written in English, all majors must take at least:

1. Two *full courses or seminars dealing with English literature* written before 1700. (*One* of these courses may be a 100-level, i.e.: 120 *Introduction to Shakespeare;* 111 *English Poetry II;* 122 *English Drama;* or 150 *Medieval Literature*). The 200-level courses fulfilling this requirement include: 250 *Medieval Literature;* 251 *Chaucer;* 253 *Advanced Studies in Shakespeare;* 255 *Studies in the Renaissance;* and 294 *History of the English Language.*
2. Two *full courses or seminars dealing with English or American* literature written between 1700 and 1900. (*One* of these courses may be 100-level, i.e.: 123, *English Drama;* 131 or 132, *English Fiction;* 133 *Fiction by Women Writers;* 162 *Satanic Heroes from Milton to the Brontes;* 163 *Gothic Fiction;* 180-181, *Major American Writers).* The 200-level courses fulfilling this requirement include: 260 *Special Topics in Eighteenth-Century Literature;* 261 *The Augustan Age;* 262 *Jane Austen;* 263 *British Romantic Literature;* 264 *The Rise of the Sublime;* 265 *Victorian Literature I;* 266 *Victorian Literature II;* 267 *Darwinism;* 280 *Early American Literature;* 281 *American Literary Renaissance;* 283 *Visions of Representation,1860-1920;* 284 *Studies in Nineteenth-Century American Literature;* 286 *American Spaces;* 288 *Art of the City, Paris and New York.*

E. During the sophomore year, in consultation with an advisor, theEnglish major selects an area of specialization. Majors must take seven courses in their chosen area of specialization. Descriptions of areas of specialization with lists of required and recommended courses are available from the department.Areas of specialization include literature written before 1700, eighteenth-century and Romantic literature, American literature, Victorian literature, and twentieth-century literature. The department also offers areas of specialization which link to the University's formal concentrations in communication studies, education, and women's studies. Students wishing to double major may make the second major the basis for their area of specialization. In consultation with at least two members of the department faculty, English majors may design their own areas of specialization.

F. Every major's program must include at least *four* full-semester courses at the

200-level in English, in addition to the required seminar in criticism ("C." above). A student may count any of the courses listed under Comparative Literature toward the English major. In all cases, such electives must be approved by the student's advisor in the English Department as being meaningfully related to the student's overall program of English studies. The 200-level courses of the Comparative Literature Program such as Comparative Literature 230, 240, and 251 are especially recommended.

HONORS PROGRAM

Students who wish to take honors in English should identify an area of interest, choose an appropriate honors advisor, and apply to the department chair before the end of the junior year. See English 299.8, *Honors in English,* for details.

DIRECTED RESEARCH OPPORTUNITIES

During their junior and senior years, English majors are encouraged to experience professional literary scholarship by engaging in research with a professor of the student's choice. The research may take several forms: it may be funded by a grant; it may be undertaken for course credit; or it may be in the form of a special project. Interested students should contact their advisors to see if such work is suitable to their area of specialization.

INTERNSHIP OPPORTUNITIES

In cooperation with the University's Internship Office, the English Department administers an internship program for juniors and seniors. Internships are available both in University offices and beyond the campus–at newspapers, news departments of radio and television stations, periodical and book publishers, and communication departments. Internships can in most cases be integrated into the student's chosen specialization.

GRADUATE PROGRAM

The University offers a program leading to the master of arts degree in English. Scholarships providing tuition remission are available, and teaching assistantships (half-time teaching and half-time study)–with stipends plus tuition remission–are available for superior students. For the master of arts, the student must satisfactorily complete at least eight full upper-level courses or seminars, which include 340 *Introduction to Graduate Study;* 396 *Thesis Colloquium;* and 397 *Master's Thesis.* In addition to completion of the master's thesis (English 397), the student must pass a final oral examination.

COURSE NUMBERS AND LEVELS

The "010-020" designation indicates preparatory writing courses which do not satisfy major requirements. English 020, *Introduction to Literature and Composition,* satisfies the University's *verbal expression* requirement.

The "100" designation indicates courses taught at introductory or intermediate levels.

The "200" designation indicates courses taught at the advanced level.

The "300" designation indicates courses taught at the graduate level.

010-020
100-109
200-209 Writing courses (includes IDND 015 and IDND 018)

110-119	Genre courses: Poetry
120-129	Genre courses: Drama
130-139	Genre courses: Prose narrative
140-149	
240-249	Courses in critical theory
150-159	
250-259	Medieval and Renaissance literature
160-169	
260-269	Eighteenth- and Nineteenth-Century English literature
170-179	
270-279	Twentieth-century English literature
180-189	
280-289	American literature
190-199	
290-299	Language and communication

WRITING PROGRAM

PROGRAM FACULTY

Leone Scanlon, Ph.D.: director

Several part-time staff, carefully chosen for their teaching experience and expertise, also teach each semester in the writing program.

Writing courses are listed as "Interdepartmental/Nondepartmental (IDND)" because the teaching of writing at Clark is considered the responsibility of the entire faculty, not of any one department. IDND 015 and IDND 018, listed below, are, for some students, prerequisites to courses that meet the University's *verbal expression* requirement. These courses are listed under various departments.

IDND 015 ENGLISH WRITING/Workshop

Designed to prepare students to do college-level writing, the course is required of some students on the basis of placement screening. Through frequent writing and rewriting, the course works to develop fluency, organizational and editing skills, and mastery of basic sentence structure. No credit is granted for this course.
Staff/Offered every year

IDND 018 EXPOSITORY WRITING/Workshop

Centered on student writing, the course teaches the writing process, emphasizing revision. Readings and writing assignments concern the study of language in such fields as advertising, journalism, and politics. Students write essays, informal exercises, and a short investigative paper. This course is required of some students.
Staff/Offered every semester

IDND 162 WORKSHOP FOR WRITING ASSISTANTS

Limited to and required of students assisting in first-year seminars and *verbal expression* courses, this workshop focuses on how to facilitate writing groups, diagnose writing problems, and review papers.
Ms. Scanlon/Offered every semester

DEPARTMENT COURSES

019 THE ESSAY: READING AND WRITING/Workshop

This course is designed to help students who have acquired competence in expository prose to improve their style and rhetorical competence through reading and writing essays. The readings include essays by such writers as Alice Walker, Annie Dillard, Frederick Douglass, and Stephen Jay Gould. Extensive writing and rewriting is done. The course meets the University's *verbal expression* requirement.
Ms. Scanlon/Offered every year

020 INTRODUCTION TO LITERATURE AND COMPOSITION/Discussion

This course provides the student with an opportunity for intensive reading and writing about basic elements of poetry, fiction, and drama. Small classes and limited reading lists help establish an atmosphere conducive to significant class discussion; emphasis is placed on writing effectively about literature. This course satisfies the University's *verbal expression* requirement. Strongly recommended for prospective English majors. No student may take more than one section of English 020.
Staff/Offered every year

103 LITERARY RESEARCH AND WRITING/Workshop

This course gives students instruction in word processing as well as in methods of writing professional research papers in expository prose. The entire semester is spent on the production of one long paper that is to meet a requirement for another course (not necessarily in the English Department) which the student is taking concurrently. Meets the University's *verbal expression* requirement.
Ms. Gertz/Offered every year

106 CREATIVE WRITING: FICTION/Workshop

This is a course designed to cultivate and guide student work chiefly in the short story, but students may also work with personal memoirs. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are also discussed. Not open to first-year students. Prerequisite: 020, *Introduction to Literature and Composition* or any higher literature course taught in any department or permission of the instructor. Graded only on a credit/no credit basis.
Staff/Offered every year

107 CREATIVE WRITING: POETRY/Workshop

This course focuses on prosody and other elements of poetry, and on the writing of narrative, lyric, and dramatic poems. Not open to first-year students. Prerequisite: 020, *Introduction to Literature and Composition* or any higher literature course taught in any department or permission of the instructor. Graded only on a credit/no credit basis.
Staff/Offered every year

110 ENGLISH POETRY I/Lecture, Discussion
The sequence 110-111 focuses on the development of the most important forms, themes, and movements in English poetry. This course, required for the English major, emphasizes intensive study and discussion of individual poems. It includes a series of essays on assigned topics and fulfills the University's *verbal expression* requirement.
Ms. Hilsinger, Mr. Sultan, Ms. Goble/Offered every semester

111 ENGLISH POETRY II/Lecture, Discussion
This is the sequel to *English Poetry I.* Poetry by Yeats, Dickinson, Wordsworth, Pope, Milton, and a group of Renaissance lyric poets is studied in that order (reverse chronology). Relevant issues in the contexts and art of poetry are considered. Prerequisite: a course devoted to the study of poetry.
Mr. Sultan/Offered every year

120 INTRODUCTION TO SHAKESPEARE/Lecture
Designed for any student who wants an introduction to Shakespeare, this course studies several major plays in detail with an emphasis on performance. At least six plays are read, including one major tragedy. Prerequisite: *verbal expression* course.
Ms. Vaughan, Ms. Gertz/Offered every year

122 ENGLISH DRAMA I/Lecture
This course is the first half of a survey of drama and its historical and social context in English-speaking countries. It covers the medieval theater and the drama of Renaissance England to the closing of the theaters in 1642 by the Puritan republic. Prerequisite: *verbal expression* course.
Ms. Vaughan/Offered every other year

123 ENGLISH DRAMA II/Lecture, Discussion
This course is the second half of a survey of drama in its historical and social context in the English-speaking countries. It covers the three centuries from the restoration of the monarchy in England and the reopening of the theaters in 1660 to the 1970s. Prerequisite: *verbal expression* course.
Mr. Sultan/Offered every other year

131 ENGLISH FICTION I/Lecture, Discussion
The sequence 131-132 explores British narrative and fictive modes from the eighteenth and nineteenth centuries. Writers studied in this course include Bunyan, Defoe, Richardson, Fielding, Johnson, Sterne, Austen, and Mary Shelley. Close attention is paid to texts, their intellectual, historical, and biographical contexts, and to recent critical approaches to prose fiction. Prerequisite: *verbal expression* course.
Mr. Venturo/Offered every other year

132 ENGLISH FICTION II/Lecture, Discussion
This course continues the exploration of British narrative and fictive modes. Writers studied include Thackeray, Dickens, Eliot, Carroll, Hardy, and the Brontes. Close attention is paid to texts, their intellectual, historical, and biographical contexts, and recent critical approaches to prose fiction. Prerequisite: *verbal expression* course.
Mr. Venturo/Offered every other year

133 FICTION BY WOMEN WRITERS, 1688-1899/Lecture
Authors studied include Behn, Burney, Austen, Bronte, Eliot, Gilman, and Chopin. The

emphasis in this course is upon these women authors' and their characters' reactions to, and interactions with, the atmospheres and landscapes of their respective ages. Prerequisite: *verbal expression* course.
Ms. Hilsinger/Offered every other year

134 MODERN FICTION BY WOMEN WRITERS/Lecture
This course is concerned with works written in the twentieth century that provide portraits of women in all stages and conditions of life, rendered in a broad spectrum of fictional techniques. The selection of authors and works is based on three major concerns: that the literature represent a chronological span, that it preserve a certain thematic coherence, and that it allow ample opportunity for discussion of aesthetic matters. Authors studied include Gertrude Stein, Djuna Barnes, Katherine Mansfield, Virginia Woolf, Katherine Ann Porter, Zora Neale Hurston, and Iris Murdoch. Prerequisite: *verbal expression* course.
Ms. Hilsinger/Offered every other year

136 CONTEMPORARY NARRATIVES/Lecture, Discussion
This is a study of representative narratives selected from American, British, and European writers. Selections include nonfiction, fiction, film, and "non-literary" sources including television in order to examine the nature, structure, impact, and interrelationships of contemporary narratives. Prerequisite: *verbal expression* course.
Mr. Elliott/Offered every year

142 PSYCHOLOGY AS A HUMAN SCIENCE/Dialogical format
Refer to course description under Psychology 155.
Mr. Kaplan/Offered every year

150 MEDIEVAL LITERATURE/Lecture, Discussion
This course traces the influence and impact of medieval literature in the literary continuum of Western culture, examining classical roots and contemporary counterparts. The course concentrates on a different theme each year that may be drawn from the following repertoire: rhetoric and romance in medieval literature; narratology; the shrinking stage in Western literature; the epic hero and the lady lover; Vergil in the Middle Ages; and Ovid in the Middle Ages. Students may take the course more than once provided they study a different theme each time.
Ms. Gertz/Offered every year

162 SATANIC HEROES FROM MILTON TO THE BRONTES/Lecture, Discussion
This course chronicles the development of, and changing response to, the Satanic hero from the time of his invention by Milton in 1667 to Emily and Charlotte Bronte's treatment of this character in 1847. Works read include Milton's *Paradise Lost,* Richardson's *Clarissa,* Blake's *Marriage of Heaven and Hell,* Byron's *Childe Harold,* Mary Shelley's *Frankenstein,* Emily Bronte's *Wuthering Heights,* and Charlotte Bronte's *Jane Eyre.* The course uses the shifts in attitude toward the Satanic hero to explore changing literary and social values from the Restoration to the eighteenth century to the Romantic Period and the Victorian Era.
Mr. Venturo/Offered every other year

163 GOTHIC FICTION/Lecture, Discussion
This class studies the development of gothic fiction both in England and America. The

first half of the semester begins with Horace Walpole's *The Castle of Otranto* (1764) and ends with Jane Austen's parody of gothic fiction, *Northanger Abbey* (1818). Also included are works by Ann Radcliffe, Matthew "Monk" Lewis, Mary Wollstonecraft, and Mary Shelley. The reading of American gothic begins with a selection of short stories by Edgar Allan Poe and Henry James. The remainder of the course tracks twentieth-century American gothic fiction by writers such as H. P. Lovecraft, Victoria Holt, Anne Rice, and Stephen King.
Mr. Berninghausen/Offered every year

172.1 MODERN DRAMA I/Lecture, Discussion
Refer to course description under Theater Arts 154.1.
Mr. Schroeder, Ms. Bessell/Offered every other year

172.2 MODERN DRAMA II/Lecture, Discussion
Refer to course description under Theater Arts 154.2.
Mr. Schroeder, Ms. Bessell/Offered every other year

180 MAJOR AMERICAN WRITERS/Lecture, Discussion
The sequence 180-181 takes a historical approach to American literature from Puritanism to the present. This part of the sequence concentrates on early American literature, circa 1620-1860. Texts by Taylor, Edwards, Rowlandson, Franklin, Rowson, Douglass, Emerson, Thoreau, Hawthorne, Melville, and others are read closely. Prerequisite: *verbal expression* course.
Mr. Berninghausen/Offered every year

181 MAJOR AMERICAN WRITERS/Lecture, Discussion
This part of the sequence 180-181 concentrates on the evolution of American literature from circa 1860 to the present. Texts by such writers as Whitman, Twain, Howells, Dickinson, Jewett, Crane, James, Frost, Eliot, Faulkner, and Hemingway are read closely. Prerequisite: *verbal expression* course.
Mr. Conron, Mr. Elliott/Offered every year

190 COMMUNICATION, CULTURE, AND SOCIETY/Lecture, Discussion
A core course rather than a survey or introduction, this course focuses on concepts and ideas from several disciplines that contribute to (or criticize) the intellectual foundations of the communications field. Philosophical and humanities-oriented in its approach, the course may include readings by Barthes, Dewey, Lippman, Saussure, and Sontag. Prerequisite: Students must have taken or be taking concurrently at least one other communication course.
Staff/Offered every year

191 LANGUAGE DIVERSITY IN THE U.S./Lecture, Discussion
This course focuses on the ways in which language use and attitudes about language differ in relation to race, ethnicity, gender, and socio-cultural background. We give special consideration to African-American English, male and female language differences, ethnic and social class markers in language, and bilingualism. Topics are approached from sociolinguistic and communicative perspectives.
Ms. Johnson/Offered every year

192 ETYMOLOGY/Lecture, Discussion
The goal of this course is to increase students' vocabularies by up to a thousand words.

Students study the history of English from its Indo-European source to contemporary slang and analyze the ways words are adopted and created. After the historical study and the analysis, the course focuses on the lexicons of different disciplines, such as religion, philosophy, government, and biology.
Mr. Blinderman/Offered every year

193 THE LANGUAGE OF BIOLOGY/Lecture, Discussion
In this course students are introduced to Latin and Greek stems and affixes that constitute biological terms in biological studies such as paleontology, taxonomy, and, especially, medicine.
Mr. Blinderman/Offered every year

195 DOCUMENTARY FILM/Workshop
Documentary films shown demonstrate the development of this kind of film and filmmaking since its inception. The content, point of view, and technique of each film are analyzed. Films include some made by the instructor. Students write a reaction paper for each of the approximately 12 films shown. In addition, students write a 10-page term paper analyzing a number of related films. The course is designed to make the student a more knowledgeable and critical viewer—or maker—of documentary films.
Mr. Wilkes/Offered every year

202 WRITING FOR MAGAZINES I/Workshop
Emphasis throughout the course is on researching and writing magazine and newspaper articles. Careful attention is given to all stages of writing a good and publishable article, beginning with rigorous discussion about story ideas and methods for obtaining the necessary information. Students also learn how to "personalize" a story. All stories are written with possible publication in mind. Three stories, varying in length from 1,000 to 2,500 words, are written and extensively rewritten. Reading the *New York Times* is required; weekly quizzes. Not open to first-year students. Prerequisite: one writing course or professional journalism experience, including work on *The Scarlet*.
Mr. Wilkes/Offered every year

203 WRITING FOR MAGAZINES II/Workshop
This course follows up on skills learned in *Writing for Magazines I*. Students spend more time on longer stories that require extensive research and reporting. Extensive rewriting of stories is done. The emphasis is on writing stories that have the possibility of appearing in local, regional, or national publications so as to prepare the student for writing professionally upon graduation. Reading the *New York Times* is required; weekly quizzes. Prerequisite: 202, *Writing for Magazines I*.
Mr. Wilkes/Offered every year

241 THE MYTHOPOETIC MODE/Seminar
This course explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespeare's *Henriad*, Milton's *Paradise Lost*, Bronte's *Wuthering Heights*, Melville's *Moby Dick*, and works of the modern period. Prerequisite: permission of instructor.
Ms. Hilsinger/Offered every year

242 PSYCHOLOGY OF LANGUAGE/Seminar
Refer to course description under Psychology 242.
Mr. Kaplan/Offered periodically

243 THE PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE/ Dialogical Format
Refer to course description under Psychology 256.
Mr. Kaplan/Offered every other year

244 INTERPRETATION OF DREAMS AND OTHER PRODUCTS OF THE IMAGINATION/Seminar
Refer to course description under Psychology 260.
Mr. Kaplan/Offered every other year

245 THE CREATIVE PROCESS/Seminar
Refer to course description under Psychology 277.
Mr. Kaplan/Offered periodically

246 PSYCHOLOGY AND RELATED DISCIPLINES/Seminar
Refer to course description under Psychology 284.
Mr. Kaplan/Offered periodically

247 SYMBOLIZATION AND SYMBOLIC ACTION/Seminar
Refer to course description under Psychology 357.
Mr. Kaplan/Offered periodically

248 CONTEMPORARY LITERARY THEORY/Seminar
This course traces the development of several theoretical approaches to literature in the twentieth century, culminating with recent positions. We may also attempt to apply these approaches to several literary works. General areas of study are selected from among the following: textual criticism, new criticism, semiotics, phenomenology, psychoanalysis/reader response, structuralism, poststructuralism, feminism, Marxism, postmodernism.
Mr. Elliott/Offered every year

249 SIGNS AND CROSSROADS: SEMIOTIC THEORY AND PRACTICE/Seminar
This course approaches semiotic theories comparatively. They are examined from a historical point of view, as well as from a theoretical point of view that breaks them down into three different schools (American, French, and Italian). In addition to learning about semiotic theories, the student is also able to practice them in a comparative mode; use in areas such as literature, film, advertising, and drama is addressed and analyzed.
Ms. Gertz/Offered periodically

250 MEDIEVAL LITERATURE/Seminar
This course emphasizes literary theory as well as literature of the Middle Ages. The course attempts to achieve a sense of medieval literary culture and uses texts from Europe and Great Britain as well as from the classical period. Texts vary each time the course is offered.
Ms. Gertz/ Offered every other year

251 CHAUCER/Seminar

This course guides the student through *The Book of the Duchess, The House of Fame, The Parlement of Fowls*, some *Canterbury Tales*, and *Troilus and Criseyde*. All texts are taught in Middle English (no prior knowledge of Middle English required).
Ms. Gertz/Offered every other year

253 ADVANCED STUDIES IN SHAKESPEARE/Seminar

This course explores recent trends in research and criticism of Shakespeare's texts, using at least nine plays as a foundation. Topics and focus vary from year to year, but include feminist, new historicist, and cultural materialist interpretations, performance criticism, and theater history. Open only to junior and senior English majors or to students who have successfully completed English 120, *Introduction to Shakespeare*.
Ms. Vaughan/Offered every year

255 STUDIES IN THE RENAISSANCE/Seminar

This course explores the poets, playwrights, and prose writers who shaped the English literary Renaissance. Authors to be studied may include Thomas More, Philip Sidney, Edmund Spenser, Christopher Marlowe, Mary Wroth, John Donne, William Shakespeare, Elizabeth Cary, George Herbert, Ben Jonson, Thomas Middleton, and John Webster. Their writings are placed in the sociopolitical context of the sixteenth and seventeenth centuries. The focus for 1993 is on the construction of gender roles in Tudor and Stuart drama. Prerequisite: permission of the instructor.
Ms. Vaughan/Offered every other year

258 SAINTS, SINNERS, AND SUPERMEN: THE ENGLISH RESTORATION, 1660-1700/Seminar

This course explores the tension between the libertine, secular, and aristocratic values of the Cavalier authors of the Court of Charles II, and the contemplative, spiritual, and commercial values of their Puritan and Republican opponents by examining how the Cavaliers and Puritans each attempt to define heroism in the period from 1660 to 1700. Authors to be studied include Milton, Bunyan, Dryden, Behn, Congreve, Etherege, Wycherley, Killigrew, Philips, and Rochester. Prerequisite: permission of instructor.
Mr. Venturo/Offered periodically

260 SPECIAL TOPICS IN EIGHTEENTH-CENTURY LITERATURE: REACTION AND REVOLUTION, 1660-1800/Seminar

This course offers students an opportunity to explore historical and theoretical problems related to the study of English literature from 1660 to 1800. Topics change with each new seminar. Recent topics have included: the background to *Frankenstein*, political literature of the later eighteenth century, and approaches to Swift. Prerequisite: permission of instructor.
Mr. Venturo/Offered every other year

261 THE AUGUSTAN AGE/Seminar

Biographical, historical and historicist in orientation, this course explores the poetry and prose of the great age of English satire—an age in which "modern" and Renaissance values engage in a terrific clash. Authors to be studied include Dryden, Swift, Gay, Pope, Fielding, Lillo, and Defoe. Works are read closely and placed in literary, political, and socioeconomic context. Prerequisite: permission of instructor.
Mr. Venturo/Offered every other year

263 BRITISH ROMANTIC LITERATURE/Seminar

This course examines its subject from different perspectives–philosophical, biographical, and critical. To uncover what the Romantic sensibility is–how it relates to nature, the self, revolution, and society–we study selected works of the major Romantic authors.
Mr. Blinderman, Mr. Venturo/Offered every other year

264 THE RISE OF THE SUBLIME/Seminar

This course traces the rediscovery of the Sublime as an aesthetic category in the eighteenth century and its use by eighteenth- and nineteenth-century writers. Special attention is paid to the cult of "enthusiasm," the drift toward subjectivism and psychology in literature, the concept of "original genius," and the importance of the "grand" in nature. Authors studied include: Longinus, Alexander Pope, John Dennis, Thomas and, Joseph Warton, Edward Young, Samuel Johnson, Edmund Burke, Mary Wollstonecraft, William Wordsworth, Lord Byron, Mary Shelley, and Charlotte Bronte.
Mr. Venturo/Offered periodically

265 VICTORIAN LITERATURE I/Seminar

This course introduces students to Victorian literature. Topics include medieval and gothic themes, evangelicalism and Anglo-Catholicism; Darwinism and Social Darwinism; and efforts to achieve political, industrial, and other reforms. The course does not emphasize, but does engage in, literary criticism. Authors studied include John Newman, Thomas Huxley, Charles Dickens, Robert Browning, Alfred Tennyson, John Stuart Mill, and Harriet Taylor.
Mr. Blinderman/Offered every other year

266 VICTORIAN LITERATURE II/Seminar

This course introduces students to literature, painting, and music illustrative of the Victorian Pre-Raphaelite Movement and Decadent (art-for-art's sake) Movement. Authors studied include John Ruskin, Walter Pater, Christina Rossetti, William Morris, Thomas Hardy, and Oscar Wilde.
Mr. Blinderman/Offered every other year

267 DARWINISM IN LITERATURE/Seminar

This seminar is devoted to the study of Darwinism in its several dimensions, biological, philosophical, ethical, religious, political, and economic. It opens with a survey of pre-Darwinian works in natural theology and speculation about evolution, focuses on the writings of the Darwinians (especially Charles Darwin and Thomas Huxley), and concludes with a review of Social Darwinism – the survival of the fittest – in the United States. Reading list includes essays, poems, drama, and fiction; special arrangements for viewing of films. Prerequisite: permission of instructor.
Mr. Blinderman/Offered every other year

272 JOYCE AND LAWRENCE/Seminar

This course is an intensive introduction to the art of the two writers. Poems, short stories, and novels by both are studied. Prerequisite: permission of instructor.
Mr. Sultan/Offered periodically

273 THE IRISH LITERARY MOVEMENT/Seminar

This is a course in the inception, development, and effect of the literary movement that, during the end of the last century and the first decades of this century, created

a self-consciously Irish literature in English. Writers studied include Yeats, Joyce, Synge, and O'Casey. The cultural, historical, and political backgrounds of Anglo-Irish literature also are studied. Prerequisite: permission of instructor.
Mr. Sultan/Offered periodically

274 W.B. YEATS/Seminar

This course is an intensive study of the accomplishments of Yeats. The principal concern is his poetry, but attention is given to his dramatic and other writings. Also studied are his thoughts and beliefs, and his cultural role in Ireland and the world during his time. Prerequisite: either a course devoted to poetry, permission of the instructor, or English 273, *The Irish Literary Movement*.
Mr. Sultan/Offered periodically

275 VIRGINIA WOOLF/Seminar

This seminar involves intensive study of Virginia Woolf's major novels, short stories, and essays. The course emphasizes the artistic process as well as the vision of Woolf's work; it considers such issues as Woolf's feminism and critical stance. Prerequisite: permission of the instructor.
Ms. Hilsinger/Offered every other year

278 MODERN POLITICAL LITERATURE/Seminar

This is a seminar devoted to political fiction, poetry, and plays of the past century, principally in the United States, Great Britain, Ireland, France, Germany, Spain, and Latin America. Works advocating and attacking Czechoslovakian political formulations about class, race, and sex are studied. No prior knowledge of politics or political theory is necessary. Permission of instructor.
Mr. Sultan/Offered every year

280 EARLY AMERICAN LITERATURE/Seminar

This course traces the shifting grounds of American literature from 1776 to 1845, giving careful attention to the ways in which literary texts respond to cultural and political developments in the new nation. We read political tracts, novels, short stories, sketches, plays, and poetry by authors such as Thomas Jefferson, Tom Paine, John Adams, Abigail Adams, James Madison, Hannah Foster, Philip Freneau, Phillis Wheatley, Royall Tyler, Hugh Henry Brackenridge, Charles Brockden Brown, Washington Irving, James Fenimore Cooper, Catherine Maria Sedgewick, Lydia Maria Child, William Lloyd Garrison, and Edgar Allan Poe. Prerequisite: permission of instructor.
Mr. Berninghausen/Offered periodically

281 AMERICAN LITERARY RENAISSANCE/Seminar

The seminar focuses on the period of 1845 to 1860. Characteristic writings by Emerson, Fuller, Fern, Warner, Hawthorne, Melville, Stowe, and Whitman are examined in their cultural, literary, and historical context. Prerequisite: permission of instructor.
Mr. Berninghausen/Offered every year

283 VISIONS OF REPRESENTATION: 1860-1920/Seminar

This course explores the artistic and theoretical assumptions underlying American realism through selected works of American writers. The course begins by examining works by Twain, Howells, and James, then counterpoints these writers with selections from writers such as Crane, Dreiser, Jewett, Cather, Wharton, Mary Austin, Ann Petry,

and others. Prerequisite: permission of instructor.
Mr. Elliott/Offered every year

284 STUDIES IN NINETEENTH-CENTURY AMERICAN LITERATURE/Seminar

The specific content and approach for this course is determined by the instructor. The set of readings may be organized in various ways: by theme, genre, critical approach, or cultural contexts, for example. The readings, however, deal predominantly, but not exclusively, with literature written before 1900. Prerequisite: permission of the instructor.
Mr. Elliott/Offered every year

285AMERICAN MODERNISMS/Discussion

This is an interdisciplinary study of several American modernist projects in the fine arts, including Cubism and Futurism in painting; the architectural ideas of Frank Lloyd Wright and feminist reformers; and various experiments in poetry and prose fiction. Other kinds of projects studied include those of the Harlem Renaissance and of various women writers. Prerequisite: permission of the instructor.
Mr. Conron/Offered periodically

286 AMERICAN SPACES/Discussion

This course, when taught as a one-semester offering, concentrates on the effects of the picturesque aesthetic on the *representation* of nineteenth-century spaces (landscapes, domestic spaces, and mindscapes) and upon notions of pictorial form in literature, painting, architecture and landscape architecture. In the literature, we analyze the impact of the aesthetic, both story and discourse, in travel literature, in quest narratives, in literature by women, and in black folk literature. Prerequisite: permission of instructor.
Mr. Conron/Offered every year

286.1 & 286.2 AMERICAN SPACES/Discussion

When *American Spaces* is taught as a yearlong course, the fall semester (286.1) is devoted primarily to painting and architecture; and the spring semester (286.2) to the spatial analysis of fiction and poetry.
Mr. Conron/Offered every year

287 STUDIES IN LANDSCAPE/Seminar

This seminar concentrates on various aspects of twentieth-century American space in literature, painting, photography, and film. Texts for the course are chosen, and taught, by the students. Prerequisite: English 286, *American Spaces.*
Mr. Conron/Offered every other year

288.1 ART OF THE CITY: PARIS AND NEW YORK/Discussion

A comparative structural and cultural analysis of two urban designs, Haussmann's Paris and Olmsted's New York; of the visual representation of the two cities by French Impressionists and the American School of Ashcan painters; and of the literary interpretation of the cities by two urban poets, Charles Baudelaire and Walt Whitman. The cities are considered as theaters in which cultural meanings are produced through 1) spatial composition (the city as an assemblage of constructed sets, including boulevards and other promenades, monuments, and department stores) and 2) performances in the set (the city as dramatized narrative). Among the questions to be explored is the matter of cultural kinships and differences between France and the

United States. Prerequisite: permission of either instructor.
Mr. Conron and Mr. Spingler/Offered every other year

288.2 ART OF THE CITY: LOS ANGELES/Discussion
The history of Los Angeles in the twentieth century is the embodiment of a polemic between traditional and technological notions of the modern city, and is thus a quintessential expression of the American cultural spirit–or perhaps of the end of that spirit. This course approaches Los Angeles as English 288.1 approaches Paris and New York: as a theater in which cultural meaning is produced through spatial composition and dramatized narrative. Aspects of the city's design and representations of the city in film and in prose narrative also are studied. Prerequisite: permission of the instructor.
Mr. Conron/Offered periodically

294 HISTORY OF THE ENGLISH LANGUAGE/Lecture, Discussion
Focusing on the English language from a historical perspective, this course examines the changes in English during the Anglo-Saxon, medieval, and early modern periods. In addition to learning phonological and grammatical characteristics of the language during each period, the student examines language as a mirror of culture.
Ms. Gertz/Offered periodically

299.1 DIRECTED READINGS
Offered for variable credit.
Staff

299.5 SPECIAL PROJECTS
Offered for variable credit. When asking an instructor to sponsor directed readings (299.1) or a special project (299.5), the student should: (1) demonstrate competence to deal with the materials as literature and (2) present a well thought out proposal. The student must take the initiative in selecting readings or carrying out the special project.

299.8 HONORS IN ENGLISH: SENIOR YEAR
A student who plans to take Honors in English should identify an area of interest with an advisor and apply to the department chair before the end of the junior year. At the student's discretion and with the advisor's approval, a student may register for an *Honors in English* project, which carry one or two credits. If the project warrants two courses, credit for one semester's *Honors: Directed Reading* and one semester's *Honors: Directed Writing* can be arranged simultaneously or in sequence. The department requires a first draft by the first Monday in March. A complete thesis is due two weeks before the last day of classes. A second reader participates in the final evaluation. In no case will honors be granted to any student who fails to meet both deadlines (although the project still qualifies for course credit and a grade).
Staff

299.9 INTERNSHIP
Offered for variable credit.

340 INTRODUCTION TO GRADUATE STUDY IN ENGLISH/Seminar
This course examines certain fundamental aspects of literary theory and considers the nature of and relationships among the three principal areas in the discipline–

bibliography and textual analysis, literary history, and literary criticism. M.A. candidates not specifically exempted are required to take this course.
Mr. Sultan/Offered every fall semester

396 THESIS COLLOQUIUM

The purpose of *Thesis Colloquium* is to provide graduate students with guidance, expertise, and resolution regarding the master's thesis. The chief requirement is an oral colloquium presentation by students from prepared outlines or working hypotheses of their thesis topics. This presentation is ordinarily given during the semester the student is registered for *Thesis Colloquium* or the following semester. While the exact format of the workshop varies according to the professor conducting it, the colloquium can include scheduled guest lectures by members of the English Department faculty, as well as by faculty from other departments or universities.
Ms. Vaughan/Offered every spring semester

397 MASTER'S THESIS

Prerequisite: permission of the Graduate Committee.
Staff

399.1 GRADUATE DIRECTED READINGS

May be selected by students who want to pursue in-depth a topic other than that chosen for the master's thesis. Prerequisite: permission of instructor. Offered for variable credit.
Staff

Environment, Technology and Society

PROGRAM FACULTY

Christoph Hohenemser, Ph.D., *chair* : physics, technology assessment, risk analysis, hazard management

Halina Brown, Ph.D.: chemistry, toxicology, risk analysis and management, public health policy

John A. Davies, Ph.D.: physics, energy analysis

Patrick Derr, Ph.D.: philosophy, hazards management policy, public health policy

Jacque L. Emel, Ph.D.: water resources, environmental politics, hydrology

Robert L. Goble, Ph.D.: physics, energy studies, atmospheric transport, risk analysis and management

Frederick T. Greenaway, Ph.D.: environmental and bioinorganic chemistry

Dale Hattis, Ph.D.: quantitative risk assessment, pharmacokinetic modeling, carcinogenesis, biomarkers, interindividual variability, Monte Carlo simulation

Stuart Licht, Ph.D.: solar energy, analytical chemistry, theoretical chemistry

Todd P. Livdahl, Ph.D.: ecology, population biology

Samuel Ratick, Ph.D.: environmental modeling, transportation logistics and planning, locational choice, impact analysis

Ortwin Renn, Ph.D.: technology assessment, risk analysis and management, environmental psychology

Harry Schwarz, B.C.E., P.E.: water resources engineering, water planning and policy, hydrology, environmental planning

PROGRAM

Environment, Technology, and Society (E.T.S.) is an interdisciplinary program that emphasizes policy questions involving the environment and the use and misuse of science and technology. The goal of the program is to enable individuals to deal with technical issues in a social and political context and to do so with an acute awareness of the short- and long-range limitations of the natural environment to respond to human interventions. The E.T.S. Program offers an undergraduate major, a master of arts degree in environmental affairs or in technology assessment and risk analysis, and an individually-designed Ph.D. Participating faculty are drawn from a number of departments and disciplines and have research interests in a wide range of societal problems including environmental science and management, energy and technology policy, environmental psychology and sociology, and assessment and control of technological hazards. Faculty interests, which are focused on both the developed and developing world, offer students the chance to participate in research. Faculty accept undergraduates and graduate students as research participants. Office and telephone numbers are posted outside the E.T.S. Program Office located in the Sackler Sciences Center, Biophysics 356. The program assistant, Marcia V. Szugda, will be happy to make an appointment for you with an E.T.S. faculty member. If you prefer to call, the program office number is: (508) 793-7655.

When it began in 1984-85, the E.T.S. Program combined and enhanced long-established programs in Environmental Affairs and Science, Technology, and Society. Graduates of these programs have taken positions in private industry, consulting companies, environmental foundations, and government doing work that involves policy analysis and formulation, planning, risk analysis, and environmental impact assessment. Students also have gone on to other graduate fields or have pursued careers in professions such as medicine or law.

UNDERGRADUATE MAJOR

The degree requirements for an undergraduate E.T.S. major are designed to ensure that students acquire a firm foundation in natural science with considerable exposure to social science/public policy perspectives. Achieving literacy in natural science is especially important for two reasons: (1) many significant problems are accessible only with a thorough grounding in natural science and (2) there is a significant need for managers of science, technology, and environment whose technical background is more than perfunctory.

Accordingly, the requirements for the undergraduate E.T.S. major emphasize natural science and mathematics. Requirements are indicated in the following table.

REQUIREMENTS FOR THE MAJOR

1. Basic literacy in natural science
   - 6 semesters in one discipline of natural science (physics, chemistry, biology, mathematics/computer science)

- 2 additional semesters in another natural science
- 2 semesters of mathematics/computer science, one of which must be calculus and the other statistics (or 2 semesters in an additional natural science if 6 semesters of mathematics/computer science are selected.)

2. Basic literacy in social science
   - 2 semesters of basic social science (economics, government, geography, management)
3. E.T.S. courses
   - 1 introductory course
   - 2 theory and methods courses
   - 2 problem-oriented courses
   - 1 semester of capstone research involving a thesis or a research project.

Students should note that E.T.S. courses cross-listed by natural and social science departments may not be used to meet the basic literacy requirements in natural and social science.

E.T.S. majors are encouraged to strengthen their educational experience by working in academic year internships or paid summer jobs related to their goals and interests. These positions are often obtained with the advice and assistance of the program committee, whose members have contact with numerous organizations. Recent placements include the International Atomic Energy Agency in Vienna, Town of Holden Conservation Commission, the Massachusetts Energy Office, the Scientists' Institute for Public Information, the Central Massachusetts Regional Environmental Council, the Massport Office of Noise Control, the Central Massachusetts Air Pollution Control District, the Massachusetts Office of Coastal Zone Management, and Batelle Labs in Washington, D.C. Internships are encouraged and may substitute for one of the problem-oriented courses. All student programs must be specifically approved by the undergraduate advisor.

The E.T.S. Program also seeks to facilitate the involvement of undergraduates in faculty research. Much of this research is housed in the University's Center for Technology, Environment, and Development (CENTED); the remainder is located in participating departments. Detailed, up-to-date information on research opportunities is available from individual program committee members and from the program office.

Honors in Environment, Technology, and Society are awarded upon presentation and oral defense in a poster session of an undergraduate thesis. Students who wish to receive honors must have attained at least a 3.0 grade point average in E.T.S.-required courses by the end of their junior year and are encouraged to begin work the following summer on a project or internship that can be extended into a thesis during the senior year.

INTEGRATED B.A./M.A. DEGREE

Because an undergraduate liberal arts education, even with an E.T.S. major, leaves only a modest amount of time for intensive study of E.T.S. subject matter, the program offers an integrated B.A./M.A. option involving a minimum of five years of study. Under this plan, students complete an undergraduate major in the first four years and an M.A. degree during the following year(s).

Students majoring in E.T.S. can apply for the B.A./M.A. degree program. E.T.S. majors are admitted to the B.A./M.A. program with a cumulative average of B- or better. With approval of the graduate advisor, students in the combined B.A./M.A. program may count toward the graduate requirement any 200-level undergraduate courses completed with a grade of B- or better.

A request for admission to the combined B.A./M.A. program is normally made to the program chair during the junior year and will be granted if the student presents an acceptable program of undergraduate study and a cumulative average of B- or better. Students who wish to plan their B.A./M.A. program are advised to consult the E.T.S. graduate brochure available at the program office. This brochure lists sample five-year B.A./M.A. programs based on a range of undergraduate majors.

E.T.S. AND PREPROFESSIONAL PROGRAMS

E.T.S. may be an attractive major for students planning to continue in professional schools. The basic reason for this is that many of the requirements are the same.

Premedical and predental program

Students in these programs must fulfill the following requirements:

(1) a year of introductory biology
(2) a year of introductory chemistry
(3) a year of organic chemistry
(4) a year of physics, including laboratory
(5) a year of English
(6) a year of calculus
(7) a year of psychology.

Most of these required courses can be used to meet the E.T.S. major requirements. More information is available in a special premedical program booklet, available from the Office of Career Services. Also, read the section on premedical/predental programs under Special Opportunities for Study in the beginning of this catalog.

Prelaw Program

Students in this program have no fixed requirements, but it is generally important to have a number of courses in English and government to develop communication skills. More information is available from members of the Prelaw Advisory Board and the Prelaw Handbook, available at the Office of Career Services.

GRADUATE STUDIES

MASTER'S DEGREE

The master's degree in E.T.S. is not primarily an extension of liberal arts at the undergraduate level. Rather, it is an effort to train individuals who can go directly from Clark into problem-solving jobs in the areas of environmental policy or technology assessment and risk management. In this sense, an E.T.S. graduate degree is a preparation for a profession.

The M.A. in technology assessment and risk analysis trains students in evaluating the benefits and hazards of technology and may lead to further graduate work or entry-level positions in the fields of environmental and occupational health and safety as well as positions in environmental management.

Ten course units are normally required for a master's degree. These are earned through a combination of classroom courses, research apprenticeships, and theses preparation. Because of limited faculty resources for formal course offerings, graduate students should accomplish a significant portion of their learning through research apprenticeships. Emphasis on research is also consistent with the goal of the program: to prepare students for problem-solving jobs. The program has the following formal requirements:

1. *Core Curriculum*. Students must take four semesters of the E.T.S. graduate core

curriculum, including:
ETS 226: *Seminar: Environmental Hazards – Theory, Models, and Applications*
ETS 250: *Technology Assessment*
ETS 251: *Limits of the Earth*
ETS 265: *Quantitative Methods in Risk Analysis*

2. *Research Participation.* Students must take at least two semesters of research, one of which must be in a different area than the M.A. thesis. To complete this requirement, students should sign up with individual faculty under the designations:
ETS 399.2: *Directed Research*
ETS 399.3: *Thesis Research*
3. *Electives*. Four electives must be chosen from other courses offered by the E.T.S. Program and related departments and programs.
4. *Comprehensive Examination.* Students must undertake at the M.A. level a written and oral qualifying examination on the core curriculum. Normally given in May, after the completion of the spring semester, this examination is intended to test the breadth of the student's knowledge in the subject matter of the core curriculum, and it should be completed before beginning thesis work.

Students from other institutions or from Clark are admitted to the master's program upon application to the program office. Clark students who have been previously admitted to the integrated B.A./M.A. program, and who complete the requirements for this program, may count any two 200-level courses, internships, or research projects towards the ten-course requirements of the M.A. degree. These courses must have approval of the graduate advisor and must be completed with a B- or better. Students from other institutions may be given credit for two advanced courses if these would have met the requirements for Clark students.

An individually-designed Ph.D., administered by a multidisciplinary faculty committee chosen individually for each student, is available. Interested applicants should contact the chair of the E.T.S. Program, indicating their specific goals. A detailed description of the Ph.D. program appears in the E.T.S. graduate brochure available from the program office.

INTRODUCTORY COURSES

101 INTRODUCTORY CASE STUDIES/Lecture, Discussion

Introduces the student to technology assessment and environmental policy through illustrative cases covering issues such as population and food, land and water resources, energy systems, pollution control, technology assessment, waste management, and arms control. Both writing and quantitative methods are emphasized so that students will become aware of the multidisciplinary approach needed in analysis of the cases. The course can be taken for *verbal expression* credit.
Staff/Offered every semester

102 INTRODUCTION TO THE GLOBAL ENVIRONMENT/Lecture, Discussion

Provides an overview of the physical and humanistic components of major global environmental problems – world food supplies, tropical deforestation, acid rain, ozone layer destruction, and land degradation. Students are introduced to the major biogeochemical cycles, interactions of the atmosphere and hydrosphere, and measurable trends in global ecology. Poverty, world health, population trends, and the roles

of science and technology are examined as factors in, and products of, the global environment.
Ms. Emel/Offered every year

103 ENVIRONMENT 199_/Lecture, Discussion

An assessment of major environmental issues, particularly those global in nature, confronting human society in the current year. Attention to problems requiring human intervention, rapid population growth, consumption values, global poverty, ozone depletion, and hazardous waste disposal. The interplay between environmental change and public policy is stressed. Intended for those desiring introductory or general knowledge.
Mr. Kasperson/ Offered every year

105 ECONOMIC PROSPERITY AND ENVIRONMENTAL QUALITY IN EUROPE/ Seminar

The focus of this course is on the conflict between economic development and environmental quality during the early phases of industrialization in Europe and its repercussions in modern economic and environmental policies. This course can be taken for a *comparative perspective* credit. Offered as a seminar for the May term in Luxembourg.
Mr. Renn/Offered periodically

THEORY AND METHODS

109 SCIENCE AND SOCIETY WRITING SEMINAR/Seminar

This writing seminar is intended for students who are interested in how people interact with complex technologies or with complex natural systems and who wish to develop skills in using nontechnical language to describe and analyze technical subjects. Each year the seminar concentrates on a particular topic of current interest. Students write papers that – after integration and editing in the seminar – may be published as part of the *ETS Review*. Past topics have included the Challenger accident and testing for AIDS.
Mr. Goble/Offered periodically

115 HYDROLOGY/Lecture

Provides an overview of the hydrologic cycle and its major components including precipitation, evapotranspiration, soil moisture, surface water runoff, and groundwater flow. The course focuses upon the role of water as a unifying concept in environmental science. Examines human modification of natural hydrologic regimes. Prerequisite: Geography 014.
Ms. Emel/Offered every other year

124 ECONOMY AND ENVIRONMENT/Lecture, Discussion

This course addresses the historic intersection of industrialization, urbanization, and ecology. We examine cases of economic, environmental, and political conflict over the past three hundred years in order to gain historic depth on contemporary issues. London air pollution, New York City water supplies, mechanized fishing in the Pacific, European coal mining, and American forestry product industries are among the cases we consider. The course objective is to help students envision the relationships between the environment and work, technology, consumption, finance, and

other economic activities. Legal and political histories pertinent to these relations are also addressed.
Ms. Emel/Offered every other year

142 ENVIRONMENTAL CHEMISTRY/Lecture, Laboratory
Focuses on the chemistry related to environmental problems, particularly aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 102. Three lectures and one four-hour laboratory per week.
Mr. Licht/Offered every year

157 TECHNOLOGY AND SOCIAL CHANGE/Lecture, Discussion
This course focuses on the interaction between technology and society. Among the topics considered are: the nature of technology and its relationship to society; historical and contemporary case studies of the impact of technology; the nature of technological failures; and forecasts of how technology may change society by the year 2000.
Mr. Mitchell/Offered every year

175 SCIENCE, DECISION MAKING, AND UNCERTAINTY/Lecture, Workshop
An examination of decision making under conditions of scientific uncertainty. The goal of the course is to describe: (1) strengths and limitations of scientific analysis in the assessment of environmental and technological issues and (2) methods designed to aid decision making under uncertainty. Initial emphasis is on the structure of scientific knowledge, ways of knowing, and types of scientific uncertainty, with examples drawn from particle physics, chemistry, engineering, epidemiology, and opinion research. Case studies of environmental and technological risk management take these issues into the "real world." Weekly workshop includes practical exercises in statistical treatment of data, fitting data to a form, calculation of uncertainty, interpretation of epidemiological data, and computer simulations of dose-response models and multicompartmental kinetic models. This course can be taken for a *scientific perspective* credit.
Ms. Brown/Offered every year

210 ENVIRONMENT AND SOCIETY/Lecture, Discussion
A central theme of this course is to analyze the relationship between human societies, especially those that are industrialized, and the natural environment. Among the topics to be considered are: the impact of industrialization on nature, the population-resource debate, the rise of modern environmental concern and political action, and pesticides and energy policy issues.
Mr. Mitchell/Offered every year

226 SEMINAR: ENVIRONMENTAL HAZARDS — THEORY, MODELS, AND APPLICATIONS/Lecture, Discussion
An introduction for advanced students to the theory and methods of risk assessment and the management of environmental hazards. Case study material is drawn from current research including natural hazards, hazards of consumer products, energy production, toxic chemicals, and transportation. ETS 226 is part of the core curriculum for ETS graduate students.
Mr. Kasperson or Mr. Renn/Offered every year

250 TECHNOLOGY ASSESSMENT/Seminar

This course focuses on methods and techniques currently used to assess and evaluate the consequences of technologies. Different approaches to technology assessment are discussed and various case studies are presented. This course is part of the core curriculum for ETS graduate students.
Mr. Renn/Offered every year

251 LIMITS OF THE EARTH/Seminar

This course is a systemic review of the data and the quantitative methods that can be used to project changes in populations, resource bases, and environmental cycles. Student papers and presentations for the development of each are required. This course is part of the core curriculum for ETS graduate students.
Mr. Goble or Mr. Hohenemser/Offered every year

252 LOCATING HAZARDOUS FACILITIES/Seminar

This seminar provides a problem-oriented forum to study siting of hazardous facilities. The course includes a review of the theoretical foundations that relate to facility location decisions, including discussions of efficiency and equity issues, an evaluation of analytical methods that have or can be applied to this policy decision problem, and a critical analysis of specific facility location case studies. The course consists of lectures, hands-on problem analysis, and focused class discussions.
Mr. Ratick/Offered periodically

258 RISK PERCEPTION/Seminar

Based upon the theories of object perception in cognitive psychology, we investigate the intuitive mechanisms of people to collect and assimilate information about activities and events with uncertain outcomes. Discussions focus on various coping strategies in handling risky situations and on the cognitive patterns related to the assessment of uncertain events.
Mr. Renn/Offered periodically

265 QUANTITATIVE METHODS IN RISK ANALYSIS/Seminar

For advanced students, an introduction to quantitative methods in risk analysis, including fault-free analysis, dose-response models, risk benefit analysis, cost-effectiveness analysis, and quantitative methods for risk comparisons. Applications to auto accidents, nuclear power, cigarette smoking, and radiation health effects. This course is part of the core curriculum for ETS graduate students.
Ms. Brown /Offered every year

270 DECISION ANALYSIS FOR ENVIRONMENTAL MANAGEMENT AND EVALUATION/Seminar

This course focuses on the main concepts and methods currently used to generate and evaluate options for addressing and resolving environmental problems. Topics include the theoretical foundations of decision making and the theory and techniques of both classical decision analysis and multiattribute decision theory. The course is designed for students with an interest in decision and policy making. Most applications discussed are related to environment or technology in developed or developing countries.
Mr. Renn/Offered periodically

345 RESEARCH SEMINAR IN ENVIRONMENTAL PERCEPTION/Seminar

Examines theories and major research on the human perception of the natural and social environment and the relationship between perception and behavior. Attention is given to the relevant methodologies. Part of the semester is devoted to students' research interests.
Mr. Mitchell/Offered periodically

351 RESOURCE GEOGRAPHY: THEORY AND METHOD/Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.
Ms. Emel/Offered every other year

COURSES ON ENERGY PROBLEMS

130 ENERGY SYSTEMS, ECONOMICS AND POLICIES/Lecture

An introduction to the subject of energy for ETS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. The course is jointly taught by Mr. Davies (Physics) and Mr. Renn (ETS). Emphasis is placed on basic concepts, thermodynamic principles, efficiency of use, economic principles of the energy market, and energy policies. The course provides the necessary background for those planning more detailed study of energy technology or policy.
Mr. Davies, Mr. Renn/Offered occasionally

COURSES ON HEALTH AND HAZARD PROBLEMS

120 THE NUCLEAR AGE/Lecture, Discussion

An examination of the nuclear age in broad comparative perspective. The goals are (1) to describe the scientific and historical roots of nuclear technology and (2) to discuss current policy dilemmas with regard to nuclear weapons and nuclear electric power. Initial focus is on the intellectual roots of nuclear physics (1700-1913), the "golden age" of nuclear physics (1913-1939), and nuclear physics in war (1939-45). The main body of the course addresses the nuclear arms race during the cold war (1945-89), its partial devolvement since 1989, the growth and current role of nuclear electric power, and other nuclear issues such as continuing debates about the biological effects of nuclear radiation.
Mr. Hohenemser/Offered every other year

131 MEDICAL ETHICS/ Lecture, Discussion

An investigation of contemporary issues in medical ethics: informed consent, definitions of death, treatment termination and euthanasia, abortion, confidentiality and truth-telling, genetic testing and counselling, research on human subjects, allocation of scarce medical resources, new reproductive technologies, the HIV epidemic, and national health policy.
Mr. Derr/Offered every semester

232 TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/Lecture, Discussion

Theme and content vary. Offered for graduate students and for undergraduates who have completed a course in microbiology and one or more years of college-level chemistry. Prerequisites: Biology 109, Chemistry 102, and permission of instructor.
Mr. Reynolds/Offered periodically

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/Lecture, Discussion

A synoptic view of concepts and practices concerning health and disease, based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health. Emphasis on societal interactions with disease environments during the last hundred years and their intellectual consequences. Not open to freshmen.
Mr. Koelsch/Offered every other year

235 ENVIRONMENTAL HEALTH/Lecture, Discussion

Principles and practices involved in the evaluation and control of selected environmental hazards. Topics covered include epidemiology, environmental toxicology, risk assessment, infectious agents, water quality standards, water treatment practices, and occupational exposures. Prerequisites: Biology 109 and Chemistry 102, and permission of instructor.
Mr. Reynolds/Offered periodically

241 ENVIRONMENTAL TOXICOLOGY/Lecture, Discussion

Focus is on the assessment of hazardous properties of toxic chemicals in the environment and on development of public health policy. The first part covers the principles of absorption, distribution, excretion, and toxic action of chemicals on humans; animals testing; and human epidemiology. The second part covers assessment of public health risks on the basis of animal and human test results, development of standards for air and water contaminants, and uncertainty in regulating hazardous chemicals. Prerequisite: one semester of organic chemistry or permission of the instructor.
Ms. Brown/Offered every other year

246 CANCER: SCIENCE AND SOCIETY/Seminar

The focus is on one of the most dreaded diseases in modern society: cancer. In the first part, the course considers the geographic distribution of cancer in this country and the world, factors contributing to its formation, and the biologic mechanisms underlying cancer. The course then concentrates on screening techniques for detecting cancer-causing agents and on methods for assessing and regulating cancer risks to humans. The third part focuses on case studies of selected human carcinogens as well as social and political controversies surrounding this disease.
Ms. Brown/Offered every other year

COURSES ON ENVIRONMENT AND RESOURCE PROBLEMS

159 VALUES IN SCIENCE AND TECHNOLOGY/Seminar

The course is a joint venture of the Art History and ETS Programs. The purpose is to educate students in the history of art by studying analytical texts and artistic interpretations of the changes that technology triggers in society. The course can be taken for a *value perspective*.
Ms. Grad, Mr. Renn/Offered occasionally

160 CONFLICT RESOLUTION/Lecture, Discussion

This course focuses on the main concepts and methods currently used to generate and evaluate options for environmental management and to resolve international conflicts about environmental issues. The theoretical foundations of conflict and decision analysis and game theory, such as cost benefit analysis and multiattribute

utility analysis, are discussed. In addition, applications in environmental policy making are presented and students have the opportunity to practice some of the techniques for solving environmental problems.
Mr. Renn/Offered periodically

271 GROUNDWATER RESOURCES: AN INTRODUCTION TO GROUNDWATER HYDROLOGY AND MANAGEMENT/Lecture, Discussion
An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.
Ms. Emel/Offered every year

DIRECTED READING AND RESEARCH

296 REMOTE SENSING PROJECT WORK/Lecture, Laboratory
A more detailed consideration of the use of remote sensing for environmental analysis, particularly land use. Includes field work and a class remote sensing project.
Mr. Steward/Offered every other year

297 CAPSTONE RESEARCH/Seminar
A required course for senior ETS majors, this seminar offers an opportunity to integrate the strands of the ETS major or to prepare a research proposal for a master's thesis. Specific topics for investigation are chosen largely on the basis of student interest from a broad array including global environment threats, energy and other resource issues, arms control and disarmament, and technological risk assessment and management. Unlike a regular course, student presentations constitute a major portion of class meetings, with the instructor as a facilitator of discussion and as a general resource for the group. Students must be seniors or second semester juniors and must have completed a substantial fraction of their major requirements.
Mr. Goble or Mr. Hohenemser/Offered every year

298 DIRECTED READINGS
Offered to undergraduate students who want to pursue a specific topic on their own, with tutorial assistance by a faculty member. By permission only.
Staff/Offered every semester

299 RESEARCH AND THESIS
Offered to students who want to conduct research under the guidance of faculty. The product of the research may be an undergraduate thesis acceptable for honors in Environment, Technology, and Society, or it may be another product to be defined by the student and faculty tutor. By permission only. Variable credit.
Staff/Offered every semester

398 DIRECTED READINGS AND RESEARCH
Offered to graduate students who want to pursue a specific topic on their own under the supervision and guidance of a faculty member. By permission only. Variable credit.
Staff/Offered every semester

399 MASTER'S THESIS
Staff/Offered every semester

Foreign Languages and Literatures

DEPARTMENT FACULTY

William Ferguson, Ph.D., *chair*: Spanish Golden Age literature, twentieth-century Hispanic literature

Michiko Aoki, Ph.D.: Japanese language and culture

Shulamith Bitran, M.A.: Biblical studies and Jewish history

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

Marcia Butzel, Ph.D.: French and Italian film, cultural studies, French narrative

María Acosta Cruz, Ph.D.: Spanish American literature, Baroque literature, postmodern literature, comparative literature, contemporary literary theory

Carol C. D'Lugo, Ph.D.: Spanish and Spanish American narrative, literary theory

Marvin A. D'Lugo, Ph.D.: Hispanic literature and film, narrative theory

Everett Fox, Ph.D.: Hebrew Bible, Midrash, Jewish ritual and folklore, classical Jewish thought

Kenneth Hughes, Ph.D.: nineteenth- and twentieth-century European literature, comparative literature, literary theory

Hartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann, Ph.D.: French literature, feminism and women writers, autobiography, French and Francophone cultural studies

Tatyana K. Macaulay, Ph.D.: Russian and Czech languages and literatures, Old Russian literature, nineteenth- and twentieth-century Russian literature, Russian culture

Constance M. Montross, Ph.D.: Spanish-American literature

Elizabeth O'Connell, M.A.: Spanish-American literature, Latin American women writers

Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations between literature and science

Catherine C. Quick Spingler, M.A.: French language and literature

Michael K. Spingler, Ph.D.: French theater and film, comparative drama, translation

Martine Voiret, Ph.D.: eighteenth-century French literature

EMERITI

Raymond E. Barbera, Ph.D.: Romance languages

J. Fannin King, M.A.: Romance languages

J. Richard Reid, Ph.D.: Romance languages

The Foreign Languages and Literatures Department is part of the Higgins School of the Humanities.

UNDERGRADUATE PROGRAM

THE MAJOR IN FOREIGN LANGUAGES AND LITERATURES

The major in foreign languages and literatures explores the way in which nations express themselves through literature and other cultural activities. The interdisciplinary spirit of the program encourages the investigation of relationships between literature and other areas of the humanities and social sciences, such as history, philosophy, fine arts, geography, psychology, economics, sociology, and international relations.

Our major programs are meant to foster students' intellectual growth within a focused scholarly environment. Most students decide to major in a single area of language and literature (French, German, or Spanish), though their courses of study within those disciplines often reflect a special emphasis (*e.g.*, cross-cultural studies, theater, or film).

Major Requirements

1. Ten courses above the intermediate level in one or more foreign languages, of which at least one course must be *Advanced Topics* (French 199, German 199, or Spanish 199). German 103 and 104 may be counted toward the major.
2. At least one introductory-level course in literature and one in culture/criticism.
3. At least five of the ten courses required for the major must be taken in residence at the Worcester campus.
4. A minimum of two units of course work taken in a Clark-sponsored or Clark-approved study abroad program, unless individual circumstances preclude it.
5. At least five related courses, one of which must be in comparative literature, are to be selected by the student in consultation with a major advisor.
6. If the major program is concentrated in one language, a reading knowledge of a second language is strongly recommended.

(Please note: beginning in September 1992, only course grades of C or better may be counted toward a major in foreign languages and literatures.)

The Major Advisory System

In the interests of planning and realizing a coherent program of study, the department requires regular consultation between students and their major advisors (departmental faculty members in the appropriate discipline who are assigned to students at the time the major is declared). Major advisors can be particularly helpful in explaining department requirements, suggesting related courses in other departments, and identifying areas of special interest that may lead to an honors project in the senior year.

HONORS IN FOREIGN LANGUAGES AND LITERATURES

Majors who have done well in their *Advanced Topics* capstone course (199) are invited to do an honors project in the senior year. A student who wishes to work for honors should 1) determine an appropriate topic in consultation with the major advisor, 2) determine what faculty member is willing to supervise the honors project (it may or may not be the major advisor), and 3) secure permission to do honors from the department chair. A second reader, chosen by the student and the Honor advisor, will participate in the final evaluation. **Applicants for honors should request the chair's permission in writing before the end of the junior year.**

The honors advisor and the student are expected to agree on an appropriate work schedule, but the department requires that a preliminary draft of the project be completed at least by the first Monday in April. The final version is due one week before the last day of classes. In no case will honors be granted to any student who fails to meet both deadlines (although the project will still qualify for normal course credit and grade). An honors project carries one unit of credit.

THE MAJOR IN COMPARATIVE LITERATURE

Comparative literature is a wide-ranging, multicultural program of studies in poetry, prose, drama, film, and related arts. Offered by the Department of Foreign Languages and Literatures, the program is by nature interdisciplinary and has strong ties with several other departments in the University. In addition to the courses offered by the department in comparative literature and literatures in foreign languages, the student is encouraged to take courses in English, humanistic geography, philosophy, and visual and performing arts.

One of the special aspects of the program is the emphasis on developing a practical and critical approach to texts. This may take the form of play production, seminars in translation of lyric poetry and drama, and supervised work in contemporary critical theory (i.e., relations between text and performance, spectator positioning, and reader response).

THE MAJOR IN ANCIENT CIVILIZATION

Although officially it forms part of the department's major offerings, this major is described elsewhere in the catalog under a separate heading.

STUDY ABROAD

For information on summer-, semester-, and year-long programs of study abroad in France, Germany, and Spain, please contact Clark's Office of International Programs.

ADVANCED FOREIGN LANGUAGE COURSES LISTED BY AREA OF CONCENTRATION IN THE FRENCH, GERMAN, AND SPANISH MAJORS

LANGUAGE COURSES

French 120	*Ways of Writing, Ways of Speaking*
French 135	*Translation Workshop*
German 131	*Spoken and Written German*
German 134	*Translation Workshop*
Spanish 127	*Practice in Oral and Written Spanish*
Spanish 137	*Advanced Oral and Written Spanish*
Spanish 141	*Translation Workshop*

STUDIES IN LITERATURE

French 131	*Readings in French Literature I: History, Genres*
French 132	*Readings in French Literature II: Themes, Problems*
French 156	*History, Writing and Ideology — Twentieth-Century France*
French 171	*Visions of Change in Eighteenth-Century Literature*
French 174	*Studies in Autobiography*
French 181	*Figures of Femininity in French Literature*
French 183	*Narratives of Modernity*
French 184	Narration in Literature and Cinema
French 185	*Women's Writing in Twentieth-Century France*
French 187	*Love in the French Literary Tradition*
German 116	*Hesse, Kafka, Mann* (First-year Seminar)
German 140	*Modern German Prose*
German 145	*The German Novelle*
German 156	*The Modern German Short Story*
Spanish 131	*Readings in Hispanic Literature*
Spanish 136	*Women in Hispanic Literature*

Spanish 138	*Hispanic Literature of Political Commitment*
Spanish 139	*Hispanic Caribbean Fiction*
Spanish 142	*The Latin American Novel*
Spanish 145	*Hispanic American Short Story*
Spanish 160	*The Age of Cervantes*
Spanish 180	*Latin American Literature in Translation*

STUDIES IN CULTURE

French 136	*Studies in French Culture*
French 156	*History, Writing, and Ideology in Twentieth-Century France*
French 158	*The French-Speaking World*
French 191	*French vs American Television*
German 112	*The Fairy Tales of the Brothers Grimm*
German 188	*The Culture of the Weimar Republic in Literature, Film, and the Arts*
German 197	*The Faust Theme in Literature and Music*
Spanish 133	*Hispanic Themes*
Spanish 143	*Latin American Essay and Thought*
Spanish 207	*Field Work in the Hispanic Community*

STUDIES IN FILM AND THEATER

French 160	*French Culture Seen Through Film: Jean Renoir*
French 163	*History of French Cinema: Before World War II*
French 165	*French Dramatic Expression: Play Production*
French 167	*French Cinema: The New Wave*
French 170	*The Modern French Theater: Experiments of the Avant-Garde*
French 184	*Narration in Literature and Cinema*
German 150	*The New German Cinema*
German 166	*German Drama from Lessing to Brecht*
Spanish 140	*Spanish Dramatic Expression: Play Production*
Spanish 146	*Introduction to Cinema in Spain*
Spanish 147	*Studies in Spanish Cinema*
Spanish 148	*Introduction to Cinema in Latin America*
Spanish 149	*Studies in Latin American Cinema*

COURSES

A. Classics
B. French
C. German
D. Hebrew
E. Japanese
F. Russian
G. Spanish

A. CLASSICS

Greek 101-102 INTRODUCTORY GREEK/Lecture, Discussion
Refer to course descriptions under Classics Program listings.
Mr. Burke/Offered every year

Latin 101-102 INTRODUCTORY LATIN/Lecture, Discussion
Refer to course description under Classics Program listings.
Staff/Offered every year

B. FRENCH

French 101-102 ELEMENTARY FRENCH/Lecture, Discussion
Designed for students with no background in French or up to two years of high school French. Students work on all four language skills (listening, speaking, reading, writing) with the aim of developing an active knowledge of French. Individual work is done in the language laboratory. In the second semester, students participate in a weekly conversation group with a French teaching assistant. No credit is given for French 101 until successful completion of French 102.
Staff/Offered every year

French 102.5 ELEMENTARY FRENCH: INTENSIVE/Lecture, Discussion
Designed as an entry-level course for students who have had more than two years of high school French or the equivalent but who are not yet ready for work at the intermediate level. The course emphasizes active communication through speaking and writing. Students participate weekly in small discussion groups with a French teaching assistant and work individually in the language lab.
Staff/Offered every year

French 103 INTERMEDIATE FRENCH I/Lecture, Discussion
This course offers consolidation of basic skills in French for students who have completed French 102 or the equivalent. The course includes a systematic review and expansion of fundamental grammatical structures. Our aim is to develop skills in oral and written expression. There are weekly conversation groups with a French teaching assistant as well as individual laboratory work. Prerequisite: French 102, 102.5, or equivalent determined by placement exam.
Staff/Offered every semester

French 104 INTERMEDIATE FRENCH II/Lecture, Discussion
This course serves as a bridge between the basic skills courses and the advanced courses in language, literature, and culture. Greater emphasis is placed on the reading of literary and cultural texts. Our aim is to develop the ability to articulate ideas and to participate in meaningful discussions in French. Grammar review is based on the specific needs of the group as revealed by class work and compositions. There are weekly conversation groups with a native French speaker. Prerequisite: French 103 or equivalent determined by placement exam.
Staff/Offered every semester

French 120 WAYS OF WRITING, WAYS OF SPEAKING/Lecture, Discussion
A third-year-level course designed to increase communicative competence and especially to develop skills in writing French. Models taken from literature and the media are used as a basis for creative and critical expression. The aim of the course is to develop awareness of different registers and social levels of French and to strengthen both grammatical control and range of language use. Prerequisite: French 104 or equivalent determined by placement exam.
Staff/Offered every semester

French 131 READINGS IN FRENCH LITERATURE I: HISTORY, GENRES/ Lecture, Discussion
An introduction to the analysis and understanding of French literary texts and their visions of the world and of the self. This course focuses on literary structures and conventions that form the basis of different genres as they are expressed in different periods of history. Readings include a wide range of complete texts in prose, theater, and poetry. Prerequisite: French 120 or permission.
Staff/Offered every year

French 132 READINGS IN FRENCH LITERATURE II: THEMES, PROBLEMS/ Lecture, Discussion
A study of representative fictional and dramatic texts in the French literary tradition, organized thematically. Introduces the student to the ways literature reflects a nation's cultural and intellectual experience. Prerequisite: One third-year-level course or permission of the instructor.
Staff/Offered every year

French 135 TRANSLATION WORKSHOP/Lecture, Discussion
Students work intensively on various texts (advertising, journalism, theater, film scripts, and fiction) exploring theory, techniques, and problems of translation. The emphasis is primarily on translation from French into English and stresses lexical and syntactic aspects of comparative style. Students become acquainted with the variety of texts an American professional translator might expect to work on, including film subtitling. Prerequisite: French 120 or above or permission.
Mr. Spingler/Offered every other year

French 136 STUDIES IN FRENCH CULTURE/Lecture, Discussion
A cross-cultural course concentrating on the evolution of traditional French values, myths, and social institutions. We study the conventions and codes that determine and shape culturally based thought and perception. The course pays particular attention to the general question of ideology and representation as instruments of cultural placement and identity. Prerequisite: French 120 or above or permission.
Specific topics include: 1) Louis XIV's Gardens of Versailles and Napoleon III's redesigning of Paris as cultural texts that represent dominant political and social ideologies or 2) issues of cultural identity and cultural difference, with particular attention to Franco-American (dis)connections. Prerequisite: French 120 or above or permission.
Mr. Spingler, Ms. Kaufmann/Offered every year

French 156 HISTORY, WRITING & IDEOLOGY: TWENTIETH-CENTURY FRANCE/Lecture, Discussion
An interdisciplinary analysis of contemporary France, using literature, social texts, and film. We focus on the Occupation, the French war in Algeria, consumer society and May '68, new cultural and artistic ideologies, the new Europe, and issues of immigration. Sometimes offered as French 199. Prerequisite: French 136 or equivalent.
Ms. Kaufmann/Offered every other year

French 158 THE FRENCH-SPEAKING WORLD/Lecture, Discussion
An interdisciplinary analysis of the problematic role of the French language and the culture it represents in various parts of the world with emphasis on the Antilles, Algeria, and French-speaking Africa. Through literature, social texts, and film we

explore such issues as bilingual colonialism; the question of ***négritude***; the Algerian war; conflicts between indigenous and French social codes. Prerequisite: two courses at 131 or above, or permission of instructor.
Ms. Kaufmann/Offered every other year

French 160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR/Lecture, Discussion
A close analysis of the cinematic aesthetic and narrative strategies of the films of Jean Renoir, one of the leading and most influential figures in French cinema. The course will trace the development of his art through a detailed study of a number of his films and filmscripts, and then focus particularly on the way two works, *The Grand Illusion* and *The Rules of the Game*, explore the historical problem of a continuing presence of pre-revolution values and myths within twentieth-century French "republican" culture. Taught in English and French sections. Prerequisite for students receiving French credit: two third-year-level courses or permission.
Mr. Spingler/Offered every other year

French 163 HISTORY OF FRENCH CINEMA: BEFORE WORLD WAR II/Lecture, Discussion
A study of the major experiments and classical traditions of French cinema prior to 1940. Through close analysis of films, film scripts, criticism, and some film theory, the course emphasizes the development of film as an art and the importance of the cinema to French culture and society. Film screenings include the work of René Clair, Louis Delluc, Abel Gance, Man Ray, Fernand Léger, Germaine Dulac, Jean Vigo, Jean Cocteau, Jean Renoir, Jean Grémillon, and Marcel Carne. Taught in English and French sections. Prerequisite for students receiving French credit: two courses at the 130 level.
Ms. Butzel/Offered every other year

French 165 FRENCH DRAMATIC EXPRESSION: PLAY PRODUCTION/Lecture, Discussion
A workshop course using scene study as a way to help the student develop and refine skills in oral French through intensive practice in diction, phrasing, rhythm, and gesture. Close attention is also paid to the dramatic texts we study as theatrical works, particularly the way they function as representations of French cultural consciousness and identity. Prerequisite: French 131 or above or permission.
Mr. Spingler/Offered every other year

French 167 FRENCH CINEMA: THE NEW WAVE/Lecture, Discussion
Focuses primarily on the ground-breaking films of Jean-Luc Godard, which profoundly changed the "look" of contemporary cinema including American films. We view films by other members of the New Wave including François Truffaut, Louis Malle, and Claude Chabrol, but the course primarily explores how Godard's radical transformations of film form reflected the crisis in cultural and political consciousness in France in the 1960s.Taught in English and French sections. Prerequisite for French credit: two third-year-level courses or permission.
Mr. Spingler/Offered periodically

French 170 THE MODERN FRENCH THEATER: EXPERIMENTS OF THE AVANT-GARDE/Lecture, Discussion
A study of the origins and developments of the avant-garde theater of France with particular emphasis on the staging of the plays. The course focuses on the theater since

1950, especially works by Ionesco, Beckett, Genet, and Arrabal. Also explores the affinities between these playwrights and the Dada and Surrealist movements and studies three precursors: Jarry, Ghelderode, and Artaud. Conducted in French. Prerequisite: two courses at the 130 level or permission.
Mr. Spingler/Offered periodically

French 171 VISIONS OF CHANGE IN EIGHTEENTH-CENTURY LITERATURE/ Lecture, Discussion
This course examines how eighteenth-century literature endeavors to generate new frames of thinking and new definitions (in such areas as politics, society, education, the family) essential to producing change. Attention is given to the diverse aesthetic modes used to carry out such a project (utopian travel accounts, philosophical tales and treatises, etc.). Readings from Voltaire, Rousseau, Diderot. Taught in French. Prerequisite: two third-year-level courses or equivalent.
Ms. Voiret/Offered every other year

French 174 STUDIES IN AUTOBIOGRAPHY/Lecture, Discussion
An exploration of the evolution of modes of subjectivity in French literature through major works of self-analysis and autobiography. For each writer, we explore the interplay between memory, self-creation, and narrative form as expressions of a particular sensibility in a particular historical period. Readings include Rousseau, Stendhal, Beauvoir, Sartre, Barthes, and Duras, and critical essays about each writer. Students are asked to write an autobiographical essay as part of their final project.
Ms. Kaufmann/Offered every other year

French 180 ART OF THE CITY PROJECT: POETS AND PAINTERS OF PARIS/ Seminar
This course investigates the changing urban consciousness of nineteenth-century France by examining problems of representing the city through urban planning (architecture and urban landscape), and through the visual representation of Paris by two painters, Caillebotte and Manet, and the literary representation of Paris by two poets, Baudelaire and Rimbaud. Given in French. Prerequisite: two 130-level courses or permission.
Mr. Spingler/Offered every other year

French 181 FIGURES OF FEMININITY IN FRENCH LITERATURE/Lecture, Discussion
This course examines diverse representations of femininity in French literature. It compares the different meanings ascribed to that notion with special focus on historical and cultural aspects. Readings include: Racine, *Andromaque;* Rousseau, *Emile, la Nouvelle Héloïse;* Stendhal, *Le Rouge et le Noir*; Genet, *Le Balcon*; Duras, *Barrage Contre le Pacifique.* Taught in French. Prerequisite: Two third-year-level courses or equivalent.
Ms. Voiret/Offered every other year

French 183 NARRATIVES OF MODERNITY/Lecture, Discussion
Readings and discussions of selected narrative texts from the nineteenth and twentieth centuries. Works from several narrative forms such as the short story, the novel, the experimental short film, and the feature film are studied as examples of changing representations of "modern" social and psychological life. Particular emphasis is given to relating these narrative texts to the development of mass and artistic culture in

France from the early modern to the postmodern period. Texts include fiction by Balzac, Flaubert, Zola, Gide, and films by Clair, Dulac, Bresson, Duras, Marker, and Godard. Prerequisite: two courses at the 130 level in French.
Ms. Butzel/Offered periodically

French 184 NARRATION IN LITERATURE AND CINEMA/Lecture, Discussion
This course investigates concepts and practices of storytelling in two major types of modern narrative. Students become familiar with trends in narrative theory and analyze texts from the nineteenth and twentieth centuries, with attention to historical changes in storytelling. Taught in French. Prerequisite: two 130-level courses in French, or permission.
Ms. Butzel/Offered periodically

French 185 WOMEN'S WRITING IN TWENTIETH-CENTURY FRANCE/Lecture, Discussion
The course is a study of major works of fiction and theory as they question and illuminate each other. We explore these works in the context of the French feminist controversy between theories of sexual equality and theories of sexual difference, particularly as they relate to notions of a distinctive *écriture féminine.* Readings include texts by Colette, Simone de Beauvoir, Hélène Cixous, Marguerite Duras, Luce Irigaray, Monique Wittig and Julia Kristeva. Conducted in French. (A modified version of this course is offered periodically in English as Comparative Literature 215.)
Ms. Kaufmann/Offered every other year

French 187 LOVE IN THE FRENCH LITERARY TRADITION/Lecture, Discussion
Through the historical examination of a tradition in French literature that has shaped Western notions of love and desire, we try to come to an understanding of how these notions have been culturally produced, and how they affect our fantasies and realities. Readings include: *Tristan et Iseut*; Mme. de Lafayette, *La Princesse de Clèves*; Laclos, *Les Liaisons Dangereuses*; Flaubert, *Madame Bovary*; Duras, *L'Amant.* Literary readings are in conjunction with relevant French theoretical texts on the problematics of desire.
Ms. Kaufmann/Offered periodically

French 191 FRENCH VERSUS AMERICAN TELEVISION/Lecture, Discussion
An advanced course in the cultural study of television and related audiovisual media in France and the Francophone world. Readings in screen theory, cultural criticism, and social theory provide students with a conceptual framework for the analysis of French programming in regional, national, and international contexts. Prerequisite: two courses at the 130 level in French.
Ms. Butzel/Offered every other year

French 199 ADVANCED TOPICS TUTORIAL/Seminar
A research seminar involving close reading and independent research on various topics in literature and culture. Topics vary according to the instructor but are sufficiently wide-ranging to allow the student to identify an area of personal interest. Modified versions of courses above the 180 level are offered periodically for 199 credit. Required of majors. All others by permission.
Ms. Kaufmann, Mr. Spingler, Ms. Butzel/Offered every year

French 206 SPECIAL TOPICS IN FRENCH/Seminar
Offered for variable credit.
Staff/Offered every semester

French 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING-LEARNING/Seminar
This ongoing seminar is especially arranged for our foreign language teaching assistants. Its goal is to explore different theories of foreign language learning and the methods and strategies developed from them. Students draw upon their own experiences as teachers and learners in the foreign language classroom in order to evaluate the strengths of different instructional approaches and improve their own teaching skills. Joint sessions with faculty are scheduled at regular intervals.
Staff/Offered every year

COURSES OFFERED AT THE L'UNIVERSITE DE BOURGOGNE, DIJON, FRANCE
Students who participate in Clark's study abroad program at the Université de Bourgogne may take up to 8 course units in French and other fields. Courses are offered both in the Faculté des Lettres and the Faculté de Droit and at the Centre International d'Etudes Françaises (CIEF). The following is a representative list of courses which have been offered in the past:

Faculté de Lettres et Faculté de Droit
Thème et Version - Translation Workshop French-English and English-French
Littérature française: Romantisme et Modernité
Littérature française - L'Univers balzacien
Littérature française - Le Roman au XVIIe et XVIIIe siècles
Littérature comparée - Paris entre les deux guerres
Littérature comparée -Images de la femme dans la littérature française
Histoire de L'Art médiévale
Histoire de la Bourgogne médiévale
Histoire économique et sociale
Initiation à l'histoire rurale
Institutions politiques comparées
Analyse de la vie politique
Politiques européennes

Centre Internationale d'Etudes françaises
Composition et expression écrite - Advanced written French
  Grammaire
  Stylistique
La littérature et ses genres
Civilisation: La France contemporaine
Histoire de l'art: La peinture française au milieu du XIXe siècle
Culture et musique
Cinéma
Théâtre contemporain
Les philosophies de l'existence en France
Histoire de la Troisième République
Français économique et commerciale

C. GERMAN

German 101-102 INTRODUCTORY GERMAN/Lecture, Discussion
Designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. No credit is given for German 101 until successful completion of German 102.
Mr. Kaiser, Mr. Schatzberg/Offered every year

German 103 INTERMEDIATE GERMAN I/Lecture, Discussion
This course offers consolidation of basic skills in German for students who have completed German 102 or the equivalent. The course includes a systematic review of German grammar and reading and discussion of selections adapted from German language newspapers and magazines. Our aim is to develop skills in oral and written expression. There are weekly conversation groups with a native German speaker as well as individual laboratory work. Prerequisite: German 102 or equivalent.
Staff/Offered every year

German 104 INTERMEDIATE GERMAN II/Lecture, Discussion
This course serves as a bridge between the basic skills courses and the advanced courses in language, literature, and culture. During the first half of the semester the systematic review of grammar is completed. Subsequently greater emphasis is placed on the study of selected literary works to acquaint students with major themes of contemporary German culture. Our aim is to develop the ability to articulate ideas and to participate in discussions in German. There are weekly conversation groups with a native German speaker as well as individual laboratory work. Prerequisite: German 103 or equivalent.
Staff/Offered every year

German 106 SPECIAL TOPICS IN GERMAN
Offered for variable credit.
Staff/Offered every semester

German 131 SPOKEN AND WRITTEN GERMAN/Lecture, Discussion
This third-year course aims at strengthening good speech habits with regard to German grammar and syntax, at expanding the active vocabulary, and at improving students' ability to express themselves in writing. Literary and journalistic texts serve as a basis for discussion of important issues in contemporary German. Weekly written assignments. Recommended for majors. Prerequisite: German 104 or equivalent.
Mr. Kaiser/Offered every year

German 134 WORKSHOP IN TRANSLATION/Lecture, Discussion
Gives students a practical, concrete experience of what it means to "translate" from one language into another. The student sees that the process is not nearly so simple as it may have seemed, but that there is a scale of texts, which range from the relatively easy to those that virtually defy rendering into another tongue. In the more difficult cases, it is demonstrated that there is no such thing as a mere rendering of a text into another language, but that the process in, say, poetry, requires transposition of a whole cultural reflex into another. Various kinds of texts are examined, from the sober style of the scientific article to the emotionally charged language of lyric poetry. Prerequisite: German 104 or equivalent.
Mr. Hughes/Offered every other year

German 140 MODERN GERMAN PROSE/Lecture, Discussion
Designed to familiarize the student with German prose by Kafka, Hesse, Mann, Böll, Grass, Plenzdorf, and Wolf; includes discussions, oral and short written reports in German. Prerequisite: German 104 or equivalent.
Mr. Hughes/Offered every other year

German 142 GERMAN ROMANTICISM/Lecture, Discussion
An analysis of German romanticism from its beginning in the 1790s to its decline in the 1830s. Aesthetic credos, lyric poetry, drama, major prose works (among them, the fairy tale as an art form) are discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Hölderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff, and Heine. Prerequisite: third-year level course or permission.
Mr. Kaiser/Offered every other year

German 145 THE GERMAN NOVELLE/Lecture, Discussion
A historical and critical study of this uniquely German genre. Particular attention is paid to narrative technique and to the typical features of the novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from early romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration are discussed. Prerequisite: German 131 or equivalent.
Mr. Hughes/Offered every other year

German 156 THE MODERN GERMAN SHORT STORY/Lecture, Discussion
After years of isolation and stagnation during the Nazi period and after its collapse in 1945, young writers, eagerly trying to establish new values and anxious to link up again with the international literary developments, discovered the English and American short story with its well-established tradition and adapted this model to the historical, social, and cultural conditions in Germany. The short story became the most important literary form during the post-war years and has maintained its significance to the present time. This course involves a careful reading of representative examples by leading modern German writers with special emphasis on thematic variety and structural complexities of the genre. Prerequisite: German 104 or equivalent.
Mr. Kaiser/Offered every other year

German 166 GERMAN DRAMA FROM LESSING TO BRECHT/Lecture, Discussion
Includes reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. Focuses on the sociopolitical aspects of these works, the aims and concepts of the dramatic art, and the changing traditions of playwriting. Authors include Lessing, Goethe, Schiller, Kleist, Büchner, Schnitzler, Kaiser, and Brecht. Prerequisite: German 104 or equivalent.
Mr. Kaiser/Offered every other year

German 206 SPECIAL TOPICS IN GERMAN
Offered for variable credit.
Staff/Offered every semester

GERMAN LITERATURE COURSES CONDUCTED IN ENGLISH

German 112 THE FAIRY TALES OF THE BROTHERS GRIMM/Lecture, Discussion

Fairy tales are among the oldest and simplest forms of literature. They communicate archetypal patterns of human experience and societal behavior; they reflect human wisdom of all ages derived from all cultures; their moral teaching is universal and universally applicable. The well-known collection of the Brothers Grimm includes 210 fairy tales; about half of them are studied using different approaches to textual analysis in order to acquaint students with a variety of critical methods. No prerequisites.
Mr. Kaiser/Offered every other year

German 150 THE NEW GERMAN CINEMA/Lecture, Discussion

A study of selected films of contemporary German film directors, Fassbinder, Herzog, Kluge, Schlondorff, and Wenders. The goal of the course is to examine the cinematic technique and world view unique to each director as well as German-American cultural cross-currents and relevant social issues as represented in the films under consideration. Students are expected to study the films, read selected critical writings, write short film critiques, and produce a substantial paper dealing with some aspect of New German Cinema. Students may take the course for German language credit by participating in a German language tutorial and reading selected works in German.
Mr. Schatzberg/Offered every other year

German 188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM, AND THE ARTS/Lecture, Discussion

Examines social and political satire and efforts at cultural regeneration between the First World War and the rise of Nazism. The following works are studied within the context of the period:

Prose: Hesse's *The Steppenwolf*, Döblin's *Berlin Alexanderplatz*, Remarque's *All Quiet on the Western Front*
Drama: Brecht's *A Man's a Man, St. Joan of the Stockyards, The Measures Taken;* Zuckmayer's *The Captain from Koepenick*
Musicals: *Rise and Fall of the City of Mahagonny, The Three Penny Opera* (Brecht/Weil)
Film: *M, The Blue Angel, The Three Penny Opera, Berlin Alexanderplatz, Kuhle Wampe*
Painting: Georg Gross, Max Beckman, Otto Dix
Architecture: The Bauhaus School

This course is conducted in English, but students may receive German credit by participating in a German language tutorial and reading selected works in German.
Mr. Schatzberg/Offered every other year

German 192 RICHARD WAGNER'S MUSIC DRAMAS: MYTH AND INNOVATION/Seminar

Richard Wagner, poet and composer at the same time, has been one of the most influential figures in German and European culture during the last one hundred fifty years. In spite of considerable controversy that he aroused as a person and artist–and still arouses–the international interest in his music dramas has even been increasing in recent decades. This course concentrates on his major work, *The Ring of the Nibelung*, a cycle of four operas (*The Rhinegold, The Valkyrie, Siegfried,* and *Twilight of the Gods*), one of the most ambitious and complex musico-dramatic achievements

in the European tradition. An earlier and a later work, the transitional *Lohengrin*, and *Tristan and Isolde*, a true landmark in musical history, also are studied. Equal emphasis is placed on an examination of Wagner's mythological and literary sources, the predominant themes of his works, their psychological, philosophical and sociological implications, and on his various musical innovations such as the use of the orchestra as a major character in the structure of the drama, the *leitmotiv* and its transformations, singing style, and aspects of expanded chromatic harmony. The course also investigates Wagner's theater reform and the impact had on writers and composers up to the present time.
Mr. Kaiser, Mr. Belet/Offered periodically

German 197 THE FAUST THEME IN LITERATURE AND MUSIC/Seminar
A study of man's search for forbidden knowledge and power as represented in literature and music by the character of Faust from the Reformation to the present. The legend of the defiant necromancer who sold his soul to the devil emerged in the sixteenth century and developed into one of the great themes of Western literature. Faust is the representative of each age in which he appears. He may be a universal figure embodying the ideal man, as he does in Goethe's masterpiece; or he may be the incarnation of the sin characteristic of an age or a nation, as he is in Thomas Mann's *Doctor Faustus.* The course explores the changing concepts of Faust from the beginnings of the legend in German folklore to the present, concentrating on the following major treatments of the theme: *The History of the Damnable Life and Deserved Death of Doctor John Faustus* (1582), Marlowe's *Dr. Faustus,* Goethe's *Faust, Part I and II,* Thomas Mann's *Dr. Faustus*, and some of the operatic treatments such as Gounod's *Faust,* Berlioz's *The Damnation of Faust,* Boito's *Mefistofele,* Busoni's *Doctor Faustus.* No prerequisites.
Mr. Kaiser/Offered every other year

German 199 ADVANCED TUTORIAL IN GERMAN LITERATURE/Lecture, Discussion
The content of this course is determined by the needs and interests of individual students. Ordinarily it is taken by majors in their senior year and as a capstone experience. Other advanced students of German language and literature may be invited to participate in the tutorials as space permits.
Staff/Offered every year

German 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING-LEARNING/Seminar
See description under French 299.
Staff/Offered every year

D. HEBREW

Hebrew 101-102 ELEMENTARY HEBREW/Lecture, Discussion
Modern conversational Hebrew. Emphasis on speaking, reading, writing, and listening skills. Acquisition of vocabulary and basic grammar through conversation, drills, reading of simple texts, and listening to tapes. Two seventy-five minute class meetings per week plus one hour of mandatory drill sessions led by a teaching assistant and one hour of individual work in the language laboratory. No credit is given for Hebrew 101 until successful completion of Hebrew 102.
Ms. Bitran/Offered every year

Hebrew 103 INTERMEDIATE HEBREW/Lecture, Discussion
Modern conversational Hebrew. Emphasis on speaking reading, writing, and listening skills. Enrichment and reinforcement of verbal expressions and grammatical structures. Classes meet twice weekly for seventy-five minutes and are supplemented by individual work in the language laboratory and one hour of mandatory drill sessions led by a teaching assistant. Hebrew 102 or the equivalent required.
Ms. Bitran/Offered every year

Hebrew 104 INTERMEDIATE/ADVANCED HEBREW/Lecture, Discussion
A survey of significant Hebrew texts. Literature and newspapers are employed. Enrichment of verbal and written expression and grammatical structures. Classes meet twice weekly and are supplemented by individual work in the language laboratory and one hour of drill. Hebrew 103 or the equivalent required.
Ms. Bitran/Offered every year

Hebrew 299.6 SPECIAL TOPICS IN HEBREW/Discussion
This course presents modern Hebrew literature, predominantly in the original language. Through poetry, short fiction, and current journalism, the course examines major issues in Israeli culture: the early immigrant experience, the Holocaust, and the Arab-Israeli conflict. It also considers the historical dimension of the Hebrew language: how some words hearken back to the Bible, while others are inventions of the past century. Students enrich their verbal and written expression and study increasingly complex grammatical structures.
Ms. Bitran/Offered every year

HEBREW LITERATURE/JEWISH STUDIES COURSES CONDUCTED IN ENGLISH

Hebrew 117 INTRODUCTION TO THE HEBREW BIBLE I: NARRATIVE AND LAW/Lecture, Discussion
A close reading (in English) of the first half of the Hebrew Bible, Genesis through Kings II. Issues to be considered include: the rise of Israel against the background of the Ancient Near East, myth and history in the ancient world, biblical storytelling as an artistic and ideological form, and the world view behind biblical laws and rituals. Also discussed is the process by which the Bible took shape, in relation to ancient Israel's self-understanding. The tools of recent research in comparative religion, anthropology, archaeology, and literature are utilized. We also stress the contribution of this literature to Western thought.
Mr. Fox/Offered every year

Hebrew 118 INTRODUCTION TO THE HEBREW BIBLE II: PROPHECY AND POETRY/Lecture, Discussion
A close reading (in English) of the poetic portions of the Hebrew Bible, from Isaiah through the Writings. The prophetic revolution in Israel is evaluated: its roots, its impact on its own society as well as on later social and cultural criticism in the West. The artistry of biblical poetry is analyzed, along with the thematics of piety, despair, resignation, and eroticism that are found in such books as the Psalms and the Song of Songs. Finally, books of a more philosophical bent (Ecclesiastes, Job), which question the earlier assumptions of biblical faith, are read. As in Hebrew 117, emphasis is placed on the influence of the Bible on later thinking in the West.
Mr. Fox/Offered every year

Hebrew 121 LAWS AND LEGENDS, MAXIMS AND MYSTICAL TALES/Lecture, Discussion

An introduction in English to major texts of post-Biblical Judaism Beginning with the Roman period, the texts cover such diverse areas as folklore, ethics, legal rules, and mysticism. The sources involve ancient answers to questions of everyday living, physical and spiritual survival, and celebration; we also trace the reformulation of such questions down to the eve of the modern period. The course stresses how the texts work, centering on the role of commentary as a classic form of Jewish discourse and on an active style of group learning.
Mr. Fox/Offered every other year

Hebrew 122 WORKSHOP IN JUDAISM: SACRED TIME AND THE LIFE CYCLE/ Lecture, Discussion

Using the tools of the history of religion and anthropology, this course treats the place of rituals of time in human life and in Judaism in particular. In general, the focus is on issues of myth and ritual, and on the cultural spread of forms. In the case of Judaism, topics include: early forms and sources, the development of the sacred calendar, the transformation of form and meaning of individual rituals, and parallels throughout the world. Special attention is given to recent Jewish religious expression and to developments in the Jewish women's movement.
Mr. Fox/Offered every other year

Hebrew 123 THE MIDRASHIC TRADITION/Lecture, Discussion

An English language study of Midrashic literature, the primary Jewish literary expression after the Bible. Written down mainly during the Roman period, the texts comprise independent legends about supernatural beings; writings about biblical characters (filling in gaps in the biblical stories); traditions about the lives of the ancient rabbis; and wide-ranging statements about worldly wisdom, ethical values, and political reality. Sources are read with an eye toward what they reveal about ancient Jewish society and in the light of recent work in folklore studies. A final unit considers later forms of Midrash, such as Hasidic and contemporary variations.
Mr. Fox/Offered every other year

Hebrew 130 SUFFERING AND EVIL IN JEWISH TRADITION/Lecture, Discussion

A central problem in Western religious thought is theodicy: how to explain the existence of suffering and evil in a world ruled by a supposedly benevolent God. The course examines a wide variety of Jewish sources on the problem, which propose a wide variety of answers. Central are the biblical book of Job and its interpretations through the centuries; at the other end of history, responses to the Holocaust are considered.
Mr. Fox/Offered every other year

E. JAPANESE

Japanese 101-102 ELEMENTARY JAPANESE/Lecture, Discussion

An introduction to the Japanese language, with emphasis on speaking, listening, reading, and writing. In addition to spoken Japanese, students learn *hiragana* and *katakana* in the first semester, and begin learning *kanji* in the second.
Staff/Offered every year

Japanese 103-104 INTERMEDIATE JAPANESE/Lecture, Discussion
A continuation of first-year Japanese, with emphasis on learning *kanji*, mastering more complex grammatical forms, and increasing fluency in spoken Japanese. Prerequisite: Japanese 101-102 or permission.
Staff/Offered every year

Japanese 105-106 ADVANCED JAPANESE/Lecture, Discussion
The course is designed to develop the skill of composing memos and negotiating with the Japanese by utilizing the newest materials available in Japanese. Primary emphasis is on building critical vocabulary and understanding Japanese behavior patterns. Prerequisite: Japanese 103-104 or permission.
Ms. Aoki/Offered every year

Japanese 283 JAPANESE CULTURE AND ECONOMIC DEVELOPMENT/Lecture, Discussion
Refer to course description under History 283.
Ms. Aoki/Offered periodically

Japanese 285 JAPANESE FOLKLORE/Lecture, Discussion
Refer to course description under History 285.
Ms. Aoki/Offered periodically

Japanese 289 JAPANESE THOUGHT/Proseminar
Refer to course description under History 289.
Ms. Aoki, Mr. Tanaka/Offered periodically

F. RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross through the Worcester Consortium for Higher Education.

Russian 101-102 INTRODUCTORY RUSSIAN/Lecture, Discussion
Designed for students with no background in Russian. Focus on all four skills: listening, speaking, reading and writing. Students are exposed to various aspects of Soviet and Russian culture through video programs, films, field trips, special lectures, reading materials, and the press. The class meets three times a week; oral practice twice a week with a Russian teaching assistant. Individual work in the language laboratory and optional drill work on computers. No credit will be given for Russian 101 without successful completion of Russian 102.
Ms. Macaulay/Offered every year

Russian 103-104 INTERMEDIATE RUSSIAN/Lecture, Discussion
Students expand their basic skills and focus on idiomatic usage in oral and written expression. Students read representative Russian prose and do biweekly translations of articles from the Russian press. The class meets three hours a week and twice a week with a Russian teaching assistant. Work with video programs and Russian TV programs. Prerequisite: Russian 101-102.
Ms. Macaulay/Offered every year

Russian 106 DIRECTED READINGS
Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian.

Offered for variable credit.
Mr. Hughes/Offered every year

Russian 299.6 SPECIAL TOPICS IN RUSSIAN/Discussion
This course emphasizes the development of practical language skills in Russian. Weekly conversation sessions deal with everyday situations such as using the telephone, writing a journal, reading menus, buying theater tickets, filling out applications, and reading Russian newspapers and short stories; these activities, combined with viewing Russian television broadcasts and two Russian films, are intended to develop an increased understanding of advanced Russian grammar.
Ms. Macaulay/Offered every semester

RUSSIAN LITERATURE COURSES CONDUCTED IN ENGLISH

Russian 185 THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY/Lecture, Discussion
An examination of representative great Russian works of the last century in English translation. They are considered both as works of literary art and as social and historical artifacts. Readings include Tolstoy's *Anna Karenina,* Turgenev's *Fathers and Children*, and representative works of Pushkin, Gogol, Dostoevsky and Chekhov.
Mr. Hughes/Offered every other year

Russian 187 RUSSIAN TWENTIETH-CENTURY LITERATURE IN TRANSLATION/ Lecture, Discussion
Focus on representative Russian literary works of the twentieth century in their historical context. Topics include the Silver Age, the 1920s, Socialist Realism, The Thaw, Village Prose, the "gulag" literature, and the newest post-Soviet works. Texts by such authors as Bely, Mayakovsky, Gorky, Zamyatin, Bulgakov, Pasternak, Nabokov, Rasputin, Shukshin, Solzhenitsyn, Baranskaya and Ratushinskaya. Some readings in Russian poetics.
Ms. Macaulay/Offered periodically

G. SPANISH

Spanish 101-102 ELEMENTARY SPANISH/Lecture, Discussion
For students with no previous knowledge of the language, this course is aimed at developing basic skills in speaking, reading, and writing Spanish. The class meets for three hours per week; regular class assignments are supplemented by individual work in LARC (the Language Arts Resource Center). No credit is given for Spanish 101 until successful completion of Spanish 102.
Mr. D'Lugo, Ms. D'Lugo, Ms. Acosta Cruz/Offered every semester

Spanish 102.5 ELEMENTARY SPANISH: INTENSIVE/Lecture, Discussion
An accelerated elementary course, intended for students who have already begun the study of Spanish but who do not yet qualify for intermediate-level courses. Three hours per week, plus individual work in the Language Arts Resource Center.
Mr. D'Lugo, Ms. Montross, Staff/Offered every semester

Spanish 103 INTERMEDIATE SPANISH I/Lecture, Discussion
The first of the intermediate-level courses, Spanish 103 strengthens basic skills in the language through a variety of exercises, including taped interviews with native

speakers, improvisational acting, and discussions centered around readings on Hispanic culture and society. Grammar review is geared to the specific needs of the group. Prerequisite: Spanish 102.
Ms. D'Lugo, Mr. D'Lugo, Mr. Ferguson/Offered every semester

Spanish 104 INTERMEDIATE SPANISH II/Lecture, Discussion
Normally taken after 103, Spanish 104 includes more extensive readings on Hispanic themes as the basis for class discussion and student essays. Emphasis is on activities in reading, writing, speaking, and conversational understanding as a preparation for more advanced work. Prerequisite: Spanish 103.
Ms. Montross, Staff/Offered every semester

Spanish 127 PRACTICE IN ORAL AND WRITTEN SPANISH/Lecture, Discussion
A transitional course between intermediate Spanish and the upper-level offerings, intended to help students develop fluency and sophistication in spoken and written Spanish. Classes emphasize practice in conversation, composition, and advanced grammar review. Prerequisite: Spanish 104.
Ms. D'Lugo, Staff/Offered every semester

Spanish 131 READINGS IN HISPANIC LITERATURES/Lecture, Discussion
An introduction to modern Hispanic narrative, lyric, and dramatic literature. The course covers representative authors of both Spain and Latin America; works are studied with a view to their literary, social, cultural, and political context. Readings are chosen to illuminate a particular theme that changes each semester: for example, the idea of cultural continuity and modernity, notions of norm and deviance in the Hispanic community, or the concept of revolution as a collective and individual ideal. Since course content is variable, students may request permission to take the course twice. Conducted in Spanish. Prerequisite: Spanish 127. Required for majors. Variable topic; repeatable by permission of instructor.
Ms. D'Lugo, Mr. D'Lugo, Mr. Ferguson/Offered every year

Spanish 133 HISPANIC THEMES/Lecture, Discussion
A third-year course designed to introduce the student to the diversity of Hispanic culture through a variety of readings from literature, history, and cultural anthropology, as well as current periodicals in Spanish. The course focuses on one or two of the following national cultures: Chile, Cuba, Mexico, Spain, Argentina. Topics normally covered include parallel development of Anglo-American and Hispanic cultural institutions, changing identity of the family and the individual in twentieth-century society, the emerging identities of women in these societies, and a comparison with the traditional Hispanic definition of women's role. Conducted in Spanish. Prerequisite: Spanish 131. Required for majors.
Mr. Ferguson, Ms. D'Lugo/Offered every year

Spanish 136 WOMEN IN HISPANIC LITERATURE/Lecture, Discussion
A study of the presence of women in Hispanic literature, with a special emphasis on the twentieth century. Topics to be discussed include alienation, identity, family structure, violence against women, and problematical relationships to the patriarchal social order. Readings include major works from both the Spanish and Latin American tradition. Conducted in Spanish. Prerequisite: Spanish 131.
Ms. O'Connell, Staff/Offered every other year

Spanish 137 ADVANCED ORAL AND WRITTEN SPANISH/Lecture, Discussion
An advanced language course that offers a rapid review of grammar with exercises in composition, pronunciation, and intonation. Conducted in Spanish. Prerequisite: Spanish 131. Required for majors.
Ms. Acosta Cruz, Ms. Montross/Offered every year

Spanish 138 HISPANIC LITERATURE OF POLITICAL COMMITMENT/Lecture, Discussion
A study of the creative writer's position vis-à-vis the demands of revolutionary change in the twentieth century. Writers discussed include Pablo Neruda, César Vallejo, Ernesto Cardenal, Francisco Ayala, and Miguel Hernández; Cuban writers and poets in their sometimes ambiguous relationship to their country's revolution; the writers of the Chicano movement and the dream of Aztlán; and Puerto Rican authors, both on the mainland and on their native island. Conducted in Spanish. Prerequisite: Spanish 131 or permission.
Mr. Ferguson/Offered every other year

Spanish 139 HISPANIC CARIBBEAN FICTION/Lecture, Discussion
Readings and discussions of selected works by the principal figures in Spanish-language fiction from the Caribbean Basin. Works studied are mostly from the nineteenth and twentieth centuries. Representative works from all genres are examined in order to review the literary expression and major concerns of Hispanic Caribbean literature such as Afro-Antillean cultural movements, neobaroque literature, and literary search for national identity. Conducted in Spanish. Prerequisite: Spanish 131.
Ms. Acosta Cruz/Offered every other year

Spanish 140 SPANISH DRAMATIC EXPRESSION: PLAY PRODUCTION/Lecture, Discussion
Intended to acquaint the student with the rhythms, intonations, and gestures typical of contemporary spoken Spanish. Through the study and eventual presentation of two or more contemporary dramatic works, students gain practical experience in linguistic and cultural skills. Although some consideration is given to the texts as literature, the course is primarily a workshop in advanced oral Spanish. Prerequisite: Spanish 104.
Staff/Offered every other year

Spanish 141 SPANISH TRANSLATION WORKSHOP/Lecture, Discussion
A course intended to enable students to translate a wide variety of texts (including commercial and technical documents) from Spanish into English, and vice versa. Classes alternate between formal sessions, in which basic linguistic theory is taught, and workshop sessions, in which students use the techniques learned to translate printed material. Prerequisite: Spanish 131.
Staff/Offered every year

Spanish 142 THE LATIN AMERICAN NOVEL/Lecture, Discussion
Readings and discussions of selected works by some of the principal novelists in contemporary Latin American fiction. Emphasis is placed on technical innovations and their relation to social and political thematics. Relevant critical, historical, and cultural material will be included in order to provide a context for the creative surge reflected in twentieth-century narrative practice. Authors usually include García Márquez, Vargas Llosa, Cortázar, Puig, Fuentes, and a representative of the more recent feminist

writers. Conducted in Spanish. Prerequisite: Spanish 131 or permission.
Ms. D'Lugo/Offered every other year

Spanish 143 LATIN AMERICAN ESSAY AND THOUGHT/Lecture, Discussion
Overview of history and development of Latin American culture throughout the nineteenth and twentieth centuries. The course explores the ways in which Latin American writers have tried to define what Latin America is, and how they have sought to differentiate its culture from that of traditional European thought. Conducted in Spanish. Prerequisite: Spanish 131 or permission.
Ms. Acosta Cruz/Offered every other year

Spanish 145 HISPANIC AMERICAN SHORT STORY/Lecture, Discussion
An introduction to the tradition and development of short narrative in Hispanic America, from its beginnings in colonial chroniclers through the progressive refinements of theme, local color, style, and narrative technique that led to the fictions of the twentieth-century "Boom" and beyond. Readings include works by Rubén Darío, Horacio Quiroga, José Luis Borges, Carlos Fuentes, Julio Cortázar, Juan Rulfo. Conducted in Spanish. Prerequisite: Spanish 131 or permission.
Mr. Ferguson, Ms. D'Lugo, Ms. O'Connell/Offered every year

Spanish 146 INTRODUCTION TO CINEMA IN SPAIN/Lecture, Discussion
A historical survey of principal Spanish films and filmmakers of the past fifty years in the context of political and social change in Spain. Among the issues under consideration are the formulation of a cultural ideology through *franquista* cinema in the 1940s and the rise of opposition cinema in the 1950s until 1975, the operations of film censorship, the rise of regional film cultures in post-Franco Spain, and auteurism and the national/international audiences of Spanish cinema. Conducted in Spanish.
Mr. D'Lugo/Offered every other year

Spanish 147 STUDIES IN SPANISH CINEMA/Lecture, Discussion
This course is designed to provide students with the opportunity to explore in close detail a number of issues related to the development of film and film culture in Spain. Topics vary each time the course is offered. Sample topics: Film auteurs (Almodóvar, Borau, Buñuel, Gutiérrez, Aragón, Saura); Spanish and foreign constructions of national identity through cinema; female empowerment. Conducted in English.
Mr. D'Lugo/Offered every other year

Spanish 148 INTRODUCTION TO CINEMA IN LATIN AMERICA/Lecture, Discussion
A survey of representative film cultures, directors, and works in Latin America, with special emphasis on developments in Argentina, Brazil, Cuba, and Mexico. Among the issues under consideration are the politics of representation, cultural nationalism in Latin American cinema, issues of authorship, and alternative film practices in Third World cinema. Conducted in English; Spanish major credit available.
Mr. D'Lugo/Offered every other year

Spanish 149 STUDIES IN LATIN AMERICAN CINEMA/Lecture, Discussion
This course is designed to provide students with the opportunity to explore in close detail a number of issues related to the development of film and film culture in Latin

America. Topics vary each time the course is offered. Sample topics: Film auteurs (Alea in Cuba; Solanas in Argentina; Diegues in Brazil; "Indio" Fernández in Mexico); race, gender, and ethnicity in various Latin American cinemas; cinema as political intervention. Conducted in English.
Mr. D'Lugo/Offered every other year

Spanish 160 THE AGE OF CERVANTES/Lecture, Discussion
An introduction to Spanish literature and society in the Golden Age, from the era of the Catholic monarchs to the death of Cervantes and beyond. Through a close examination of representative works in a variety of genres, the course traces the development of the Spanish imagination from the flowering of Renaissance humanism through the Counter-Reformation and the birth of the baroque, a profile of the brilliance and despair that characterizes Spain in these imperial centuries. Conducted in Spanish. Prerequisite: Spanish 131 or permission.
Mr. Ferguson/Offered every other year

Spanish 180 LATIN AMERICAN LITERATURE IN TRANSLATION/Lecture, Discussion
This course examines major works of Latin American literature, including the Spanish-speaking countries and Brazil, with an emphasis on the cultural, political, and social context in which these literatures function. Topics include "Boom" and post-"Boom" literature, the realist novel and reactions against it, women writers, ideas of cultural identity, the role of the author in Latin America, and the effects of major historical events such as the Cuban Revolution. Different genres will be covered. Conducted in English; major credit in Spanish available. Prerequisite: permission of instructor.
Ms. Acosta Cruz, Ms. D'Lugo/Offered every other year

Spanish 199 ADVANCED TOPICS TUTORIAL/Seminar
Close readings and discussion of representative works by major Spanish writers of the premodern period. Ordinarily it is a required course for majors in their senior year as a capstone experience. Topics for 1992-94: the Spanish Baroque, the Mexican novel, and *Don Quijote*. Conducted in Spanish.
Ms. Acosta Cruz, Ms. D'Lugo, Mr. Ferguson/Offered every semester

Spanish 206 SPECIAL TOPICS IN SPANISH/Seminar
Offered for variable credit.
Staff/Offered every semester

Spanish 207 FIELD WORK IN THE HISPANIC COMMUNITY/Seminar
This course offers an opportunity to work in one of a variety of community agencies and projects serving the Hispanic community in Worcester (the bilingual school program, Casa de la Comunidad, Worcester Legal Services, etc.). Student work is supervised by a campus advisor and a designated supervisor from the cooperating agency; the student is also expected to keep a journal–to be submitted at the end of the semester–in which particulars of language, culture, and related problems of the bilingual community are critically examined. Prerequisites: proficiency in Spanish, successful completion of course work in the field or fields related to the specific project area, permission of instructor. Offered for variable credit.
Ms. Acosta Cruz/Offered every year

Spanish 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING-LEARNING/Seminar
See description under French 299.
Staff/Offered every year

French

See Department of Foreign Languages and Literatures.

Geography

GRADUATE SCHOOL OF GEOGRAPHY FACULTY

Susan Hanson, Ph.D., *director*: urban/social geography, transportation, research methods, geography and gender

David P. Angel, Ph.D.: urban/economic geography, social theory

Martyn J. Bowden, Ph.D.: cultural humanistic and historical/urban/social geography

J. Ronald Eastman, Ph.D.: cartography, geographic information systems

Jacque L. Emel, Ph.D.: resource management, political geography, hydrology

Stanley R. Herwitz, Ph.D.: biogeography, hydrology, watershed ecology

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

Gerald J. Karaska, Ph.D.: urban/economic geography, development

Roger E. Kasperson, Ph.D.: hazards, global change, environment and society

William A. Koelsch, Ph.D.: history of geography, American thought and culture, ancient Mediterranean world

Laurence A. Lewis, Ph.D.: geomorphology, tropical agriculture and environment

Robert Cameron Mitchell, Ph.D.: environment and society, risk perception, survey research methodology

Richard Peet, Ph.D.: political economy, Marxist geography

Samuel J. Ratick, Ph.D.: hazards, environment and public policy, modeling, quantitative methods

Dianne E. Rocheleau, Ph.D.: human/political/systems ecology, Third World forestry and agriculture

Henry J. Steward, Ph.D.: cartography, remote sensing

B.L. Turner II, Ph.D.: cultural/human ecology, global change, Third World agriculture

AFFILIATE FACULTY
Leonard Berry, Ph.D.
Robert W.Kates, Ph.D.

STAFF
Anne Gibson, M.A.: research cartographer, cartographic lab manager
Jean Heffernan, assistant to the director
Beverly Presley, A.M.L.S.: map and geography librarian

EMERITI
Duane S. Knos, Ph.D.
Harry E. Schwarz, B.C.E., P.E.

The Graduate School of Geography was organized in 1921 and is now the oldest doctoral-granting department of geography in the United States. The school also offers an undergraduate major. The program emphasizes individual attention through close student-teacher relationships. For each of the past five years, *Rugg's Recommendations on the Colleges* has identified the School of Geography at Clark as the best place at which to pursue an undergraduate geography major.

ONGOING RESEARCH

Geography faculty and graduate students are involved in research on a wide variety of issues. Funded research projects within the school include local labor markets and women's employment, impacts of the Alaska oil spill, industrial restructuring, water policy in the southern Great Plains, perception of water quality, soil erosion in Central Africa, the evaporation of intercepted rainfall from tropical rainforest canopies, and Indian agriculture in the Americas in 1492.

A world-renowned center for research and teaching on human-environment relationships, the School of Geography at Clark and the George Perkins Marsh Institute are actively involved in research on global environmental change. Ongoing projects include developing computer software for global change analysis, investigating resource use in East Africa, and examining natural and technological hazards.

The Graduate School of Geography has several cooperative research agreements, including one with the Institute of Geography of the Russian Academy of Sciences. Several research projects involving global environmental research and geographic information systems are currently in progress. Exchanges of students involved in cooperative research are possible.

The school is also involved in an institutional cooperative agreement with the United States Agency for International Development (USAI.D.) on the subject of Settlements and Resources Systems Analysis (SARSA); this project builds the institutional capacity of the University to support research and provide technical assistance to the overseas missions of USAI.D.. This project, which is interdisciplinary in scope, is headed by Gerald J. Karaska and has ongoing projects on three continents.

GEOGRAPHY UNDERGRADUATE PROGRAM

The undergraduate program offers a major in geography, covering a three-year period (sophomore-senior) during which 50 to 80 percent of the student's course work is accounted for by program requirements that include courses in geography and related fields. A minimum set of required geography courses is built into the major, and course work in related fields is selected in consultation with the student's advisor in light of individual needs and interests.

The departmental advisory system is headed by a central undergraduate advisor who advises all incoming majors. As students advance through the program, they may select another advisor whose interests best match their own. A geography major's courses for each semester must be approved by the advisor.

Emphasis in the undergraduate major is on broad training in the field of geography as well as on some specialization within the field. The department has facilitated specialization by organizing courses into areas of concentrated interest, or streams, and students are encouraged to take a series of courses in one or two of these streams. Within the streams, courses are sequential to allow a progressive building of knowledge and skills from 00-level to 100-level to 200-level courses. The streams at the undergraduate level are:

a) cultural/humanistic
b) environmental/resource management
c) physical geography of human systems
d) regional/international development/political economy
e) urban/social and economic/planning
f) cartography/remote sensing/geographic information systems

Geography majors are also required to become proficient in research methods and encouraged to gain skills in quantitative methods, computer programming, and mapping.

The Geography Student Organization (GSO) functions as a professional and social outlet for undergraduates. Students are encouraged to participate in its career seminars, trips, and other activities.

Gamma Theta Upsilon, the International Geography Honor Society, is open to geography majors who meet the established criteria. Alpha Sigma, the Clark chapter, originally established in 1951, was reactivated in 1991, with the induction of 24 majors.

REQUIREMENTS FOR GEOGRAPHY MAJORS

To graduate as a geography major, a student must complete the following requirements:

Within the School of Geography students must choose a total of seven required courses from the following:

- Geography 011, *Survey of Geography*
- Two courses selected from among the following:
  - Geography 014, *Introduction to Physical Geography*
  - Geography 015, *Introduction to Economic Geography*
  - Geography 017, *Introduction to Cultural Geography*
  - Geography 018, *Introduction to Urban Geography*
  - Geography 019, *Introduction to Environmental Geography: The Global Environment*
  - Geography 027, *Geography of the Third World*
  - Geography 035, *American Land, American Mind*
  - Geography 037, *Gender, Space, and Environment*
- Three skills courses selected from among the following:
  - Geography 110, *Computer and Quantitative Methods in Geography: Introduction*
  - Geography 137, *Time and Space in Old and New England*—(for students in the cultural/humanistic stream)
  - Geography 141, *Research Methods in Geography*

Geography 181, *Introduction to Cartography*

- Any 200-level cartography or remote sensing course

Geography 213, *Forest Hydrology Field Methods*
Geography 247, *Computer and Quantitative Methods: Intermediate*

As another option, the department also accepts a second-year, second-semester language course as a skill. (Other courses equivalent to those listed above may be accepted by the student's advisor.)

- Two geography courses at the 200 level in selected stream
- Two elective geography courses: one at the 100 level and one at the 200 level (one of these courses may be cross-listed).
- Geography 285, *Capstone Seminar: Themes in Geography*
- Cognate courses:

Four courses in disciplines related to the student's chosen field of interest. These courses must be approved by the faculty advisor.

DUAL MAJOR REQUIREMENTS

For students majoring in geography and another discipline, the requirements for course work within the School of Geography are:

Geography 011, *Survey of Geography*

- One 00-level introductory course
- Two skills courses (selected from the courses listed under the major
- Two 200-level geography courses in a selected stream
- Geography 285, *Capstone Seminar: Themes in Geography*

HONORS PROGRAM IN GEOGRAPHY

Students with an outstanding academic record are eligible to participate in the Geography Honors Program. To graduate with honors in geography the student must successfully complete either a one- or two-credit independent honors project conducted under the supervision of a faculty member.

The Geography Honors Program is open to juniors who, by the end of the first semester of the junior year, have a minimum grade point average of 3.25 overall and 3.5 in the geography major (geography courses and related courses) and who can demonstrate that they have the appropriate research background required to undertake independent geographic research.

The student who wants to carry out a two-semester honors thesis must register for geography honors the spring semester of the junior year and the fall semester of the senior year. A thesis proposal must be approved by the supervising faculty member by November 1 in the student's junior year.

Students wishing to pursue a one-semester honors thesis can do so either in spring of the junior year or in fall of the senior year. The deadline for approval of the thesis proposal is November 1 of the junior year if the thesis is to be completed in the junior year. The deadline for approval is April 1 of the junior year if the thesis is to be written in the fall semester of the senior year.

Students interested in the Geography Honors Program should get additional details from the undergraduate advisor in the School of Geography.

THE GRADUATE SCHOOL OF GEOGRAPHY PH.D. PROGRAM

Admissions

Applicants with or without prior training in geography are welcome. Depending on their concentrations, students may be required to improve their knowledge of geography, cartography, quantitative methods, or research methods. Courses taken to remedy any deficiencies will not count as part of the regular program. Graduate Record Examination scores, verbal, quantitative and analytical, are required of all American and Canadian students. TOEFL scores or results of another English proficiency test are required for students from countries in which English is not the first language. The deadline for graduate applications is February 1.

Graduate Program

The graduate program of study in geography at Clark focuses on the Ph.D. degree, and only those students seeking full-time training for that degree are admitted into the program.

Degree Objectives

As prospective members of the geography community, graduate students work toward the following objectives:

1. development of extensive knowledge in the content of geography and competence in the use of research skills
2. development of a sense of problem (research problems are at the core of an experiential learning process
3. development of divergent thinking skills from which creative and original ideas evolve
4. development of a sense of the tentativeness of knowledge and a patience with ambiguity
5. development of a tough-minded learning discipline
6. development of a sense of self-confidence and competence
7. development of a sense of the nature of the community of geographers.

The program is designed to enable students to focus their learning experience with these guidelines in mind. For specific graduate requirements, interested students should consult the school's separate graduate program statement of requirements, available upon request.

Program Structure

The graduate curriculum is organized to give a broad view of the field of geography and its teaching, as well as a specialized approach to selected subfields. The subfields, organized in accordance with the interests and competencies of the faculty, include: cultural/humanistic, environmental/resource management, physical geography of human systems, regional/international development/political economy, urban/social and economic/planning, and cartography/remote sensing/geographic information systems. In addition, ongoing projects conducted by research groups in the School of Geography, the Center for Technology, Environment, and Development (CENTED), the program for International Development (I.D.), and the program of Environment, Technology, and Society (E.T.S.) should be considered an integral part of the graduate curriculum; students may choose to structure their programs around such collaborative research endeavors. (See appropriate information elsewhere in this catalog on CENTED, E.T.S., and I.D.)

The first year of graduate study (for those entering with a B.A./B.S.) is planned to broaden the student's knowledge of the field of geography and the practices within it, and to help students define their interests within the context of the Clark program. During the first year of study, students normally take two graduate core seminars: *Development of Western Geographic Thought* (368) and *Explanation in Geography*

(318). The remainder of the student's course work is selected in consultation with the graduate advisor. Toward the end of the first year, a formal review of the student's progress and discussion of future plans are conducted by a three-member, first-year advisory committee. The student should declare a formal advisor during the meeting of this committee. In order to maintain satisfactory progress in the graduate program, students must obtain a minimum of five course credits by August 1 of the entry year.

The second year of graduate study emphasizes in-depth work in the student's field of interest, formation of possible doctoral exam topics, problem formulation and research, and research skills. Course work during this year should include seminars, directed readings, and directed research. By the end of the second year of study students are encouraged to (1) fulfill the skills requirement, (2) be preparing for the doctoral exam, and (3) begin dissertation proposal formulation. At the end of this year, students have a second-year review meeting with members of the student's Ph.D. examination committee; this meeting includes an assessment of student progress and advising for the next year of study. Fields for the doctoral examination will be discussed and agreed upon at the second-year review.

By the third year of study, students should be well on their way to completing most of the requirements of the graduate program. Course work should deal with specific research topics and degree requirements not yet completed. The aim is to advance to Ph.D. candidacy in order to proceed with doctoral research and writing. Doctoral examinations must be taken by the end of the third year of study. These exams focus on the student's depth and breadth of knowledge in substantive subfields of geography and on knowledge of methodological and philosophical concerns relevant to the student's interests.

Each student also is required to demonstrate proficiency in two of the following areas: multivariate statistics (satisfied by taking Geog. 247), research design/research methods (satisfied by taking Geog. 314 or Geog. 310), computer programming (satisfied by taking Geog. 298, or Computer Science 101), geographic information systems (satisfied by taking Geog. 297), foreign language (satisfied by completing a second-year, second-semester college-level course), cultural-historical studies (satisfied by taking Hist. 292, or other appropriate course). Students can demonstrate proficiency in a skill by receiving a passing grade in the indicated course or by taking an examination. Students must fulfill the skills requirement by the end of the sixth semester of study or before the defense of the dissertation proposal, whichever comes first.

The doctoral exam assesses the competency of graduate students in one major and two minor fields. Competency is defined as an understanding of the substantive content and range of theoretical approaches within each subfield. Students must be able to critique alternative research traditions and defend the theoretical frameworks they adopt. For the exam in the *major* field the student is expected to have an in-depth knowledge of the entire field. In the field selected for the *first minor*, the student is expected to have mastered a survey of the field. The topic of the *second minor* is a more narrowly defined field, and the student will be expected to have an in-depth knowledge of the second minor. The doctoral examination committee is composed of a minimum of four faculty, at least three of whom are regular appointments of the school.

At the student's discretion, the major or first minor or both can have a written component. This is in addition to, rather than instead of, the oral examination. The question(s) for each written portion of the doctoral exam will be given to the student as a "take-home" not less than one week before the oral portion of the exam, and the student will have 24 hours to complete each of these written exams. The oral portion of the exam on the major will last approximately one and a half hours, and the oral portion of each minor exam will be about 45 minutes. Each student is required to inform the director of the chosen exam format at least one month prior to the exam date.

Within two semesters of the completion of the doctoral exams, the student submits a proposal for doctoral research for approval by the doctoral proposal committee. The dissertation proposal committee consists of a minimum of four faculty, three of whom must be regular appointments of the School. Students who have completed all departmental requirements and have received approval of their dissertation proposal are eligible for Ph.D. candidacy. Those who entered with a B.A. or who have an M.A. in a field other than geography may apply for a master's degree en route to their Ph.D. At this stage students focus on dissertation research in preparation of their dissertation.

A complete draft of the thesis is defended at a working session of the dissertation committee. On approval by the dissertation committee, the final draft of the dissertation is placed on display for two weeks. At the suggestion of the dissertation committee and the director, and with the approval of the graduate student, a public presentation and dissertation signing ceremony may be scheduled.

Residence and Credit Requirements

A three-year residence and sixteen course credits beyond the B.A. degree are required for the Ph.D. program. Students entering with an M.A. in a field other than geography are expected to complete essentially the three-year residence program and at least eight course credits as determined by the school. Students entering with an M.A. in geography from another institution must complete two and one-half years of residency and eight course credits. Students must maintain satisfactory progress throughout their graduate program.

The guidelines for the Ph.D. in geography outlined here represent an overview of the program requirements. For more specific information on our graduate program, please call or write: Admissions Secretary, Graduate School of Geography, (508) 793-7337 or (508) 793-7336.

DISTINCTIVE FEATURES AND SPECIALIZATION

The main offices of the Graduate School of Geography are housed in the University's Jefferson Academic Center, complete with cartographic, earth science, and geographic information systems (GIS) laboratories. In the adjacent Geography Building, offices and work space for graduate students are provided, in addition to the Map Library, the J.K. Wright Reading Room, and the Libbey Seminar Room, which contains the personal library of Dr. Wright, regularly updated publications in the field of geography, and subscriptions to geography journals. Graduate students have their own lounge space and personal computing room.

Founded in 1921 as part of the Graduate School of Geography, the Guy H. Burnham Map and Aerial Photograph Library is an active cartographic information center. The collection, global in scope, contains 185,000 maps, as well as aerial photographs, atlases, journals, globes, map reference materials, and tourist information. Because of a depository agreement with the United States Government Printing Office, the map library houses a full array of maps published by the federal government. The library is located on the lower level of the Geography Building.

The Clark University Cartographic Service and the Automated Cartography/GIS/Image Processing Lab are located in the lower level of the Jefferson Academic Center. This area provides students with specialized workspace and cartographic equipment for both conventional and Computer-Assisted Cartography, GIS, and Digital Image

Processing. A large, well-equipped graphic production darkroom features both a vacuum-frame platemaker, color proofing facilities, and a digital process camera. Equipment for Computer-Assisted Cartography, GIS, and Digital Image Processing includes both large and small format digitizers, a large-format flatbed plotter, a color scanner, color ink-jet and laser printers, a CD-ROM drive, a 1600/6250 bpi 9-track tape drive, and 80386/486-based microcomputers with high-resolution 8514/A color graphic displays. Software includes leading raster and vector-based GIS and Image Processing systems, map projection software and digital prepress and technical illustration systems. The Cartographic Service also maintains desktop mapping capabilities consisting of two Macintosh computers, a grey-scale scanner, a color Postscript printer and various design and pre-press software systems.

The Clark University geological collection and vascular plant herbarium are maintained by the school.

PUBLICATIONS

A professional journal, *Economic Geography*, is edited by Susan Hanson and Richard Peet. Founded at Clark University in 1925, it is the only journal published in English that specializes in economic geography. The journal has a worldwide distribution and the highest "impact factor" rating among geography journals.

The graduate students maintain the Clark University Geographical Society (CUGS). The *Monadnock Newsletter* keeps School of Geography alumni in touch with each other and with news and scholarly activities of the School. The Graduate School of Geography also publishes IDRISI, a geographic information software system developed by Ronald Eastman. The system was developed at Clark, has been adopted for use by the United Nations, and has been distributed to over 4,000 organizations worldwide.

The professional work of some members of the department is published in the CENTED publication series, which includes an extensive reprint series.

GEOGRAPHY COURSE LISTING BY AREA OF SPECIALIZATION

NONSTREAM

011	*Survey of Geography*
110	*Computer and Quantitative Methods in Geography: Introduction*
141	*Research Methods in Geography*
247	*Computer and Quantitative Methods in Geography: Intermediate*
249	*Spatial Analysis*
275	*Culture, Consumption, and Class in Local and Global Contexts*
285	*Capstone Seminar: Themes in Geography*
314	*Research Design, Research Methods*
318	*Explanation in Geography*
368	*Colloquium: The Development of Western Geographic Thought*

CULTURAL/HUMANISTIC

017	*Introduction to Cultural Geography*
035	*American Land, American Mind*
105	*The Keeping of Animals: Patterns of Use and Abuse* (First-year Seminar)
108	*World Population*
117	*Culture Landscape*
132	*Before and After Columbus: Ancient Middle America and the Impact of the Conquest*

137	*Time and Space in Old and New England*
139	*Country and Culture*
142	*Cities and Culture: The American City*
161	*Cultural Identities and Global Processes*
174	*Greeks and Barbarians in the Ancient Ecumene*
177	*Cultural Ecology in Arid Lands*
196	*Culture and Sport*
217	*History of Cartography*
234	*Health and Disease in the American Habitat*
240	*The End of America: Los Angeles*
242	*Cities and Culture: The European City*
251	*Race, Migration, Gender, and Ethnicity*
253	*New England Landscape*
259	*Images, Symbol, and Myth in the American West*
276	*Cultural Ecology in the Humid Tropics*
284	*Landscapes of the Middle East*
291	*The Jonas and Susan Clark Collection*
295	*Agriculture in Third World Economies*
312	*Seminar: Agriculture and Development*
330	*Seminar in Cultural and Political Ecology*
342	*Seminar in Human Dimensions of Global Change: Driving Forces*
370	*Animal Agriculture*

PHYSICAL GEOGRAPHY OF HUMAN SYSTEMS

014	*Introduction to Physical Geography*
025	*Earth Science and Development* (First-year Seminar)
112	*Biogeography*
114	*Intermediate Geomorphology*
115	*Hydrology*
118	*Environment and Disasters*
200	*Land Degradation*
201	*Oceanic Islands: Geology and Ecology*
204	*Watershed Ecology*
211	*Geomorphology of Humid Tropics*
213	*Forest Hydrology Field Methods*
215	*Fluvial Processes in Geomorphology*
216	*The Physical Environment of Arid Lands*
218	*Seminar in Physical Environment and Development*
220	*Agriculture and Grazing: A Physical Perspective*
280	*Urban Ecology: Cities as Ecosystems*
281	*Tropical Ecology*
300	*Advanced Topics in Physical Geography*
304	*Seminar on Watershed Ecology*
362	*Seminar in Geomorphology*

URBAN/SOCIAL AND ECONOMIC/PLANNING

015	*Introduction to Economic Geography*
018	*Introduction to Urban Geography*
124	*Economy and Environment*
170	*Divided Cities, Connected Lives*
175	*Urbanization in the Third World*

244	*Gender, Work, and Space*
254	*Urban Transportation: Problems and Prospects*
262	*Urban Economic Geography*
273	*Seminar in Urban Geography*
280	*Urban Ecology: Cities as Ecosystems*
327	*Geography and Social Theory*
373	*Seminar in Urban Geography*

ENVIRONMENTAL/RESOURCE MANAGEMENT

015	*Introduction to Economic Geography*
018	*Introduction to Urban Geography*
019	*Introduction to Environmental Geography: The Global Environment*
028	*Cityscapes: Urban Planning in the Twentieth Century* (First-year Seminar)
037	*Gender, Space, and Environment*
101	*Introductory Case Studies*
124	*Economy and Environment*
157	*Technology and Social Change*
176	*Environment 199_*
179	*People, Ecology, and Global Village*
210	*Environment and Society*
213	*Forest Hydrology Field Methods*
226	*Seminar: Environmental Hazards–Theory, Models, and Applications*
228	*Management of Arid Lands*
236	*Seminar: International and Comparative Resource Policies*
246	*Technology Assessment*
252	*Locating Hazardous Facilities*
255	*Risk Perception*
257	*Theory of Multi-Objective Resource Evaluation*
266	*Quantitative Methods of Risk Analysis*
271	*Groundwater Hydrology and Management*
277	*Gender, Resources, and Development*
281	*Tropical Ecology*
283	*Nature and Culture in the Ancient World*
310	*Research Seminar in Development Geography*
342	*Seminar in Human Dimensions of Global Change: Driving Forces*
343	*Seminar in Human Dimensions of Global Change: Societal Responses*
345	*Research Seminar in Environmental Perception*
350	*Nature, Society, and Technology*
351	*Seminar in Resource Geography: Theory and Method*
355	*Social Forestry and Development*

CARTOGRAPHY

181	*Introduction to Cartography*
185	*Images of the Earth* (First-year Seminar)
189	*Remote Sensing of the Environment*
217	*History of Cartography*
261	*GIS Applications for Environmental Management*
274	*Seminar in Cartographic Design*
290	*Introduction to GIS*
292	*Cartographic Design and Production*

294	*Problems in Cartography*
296	*Remote Sensing Project Work*
297	*Applications Research in GIS*
298	*Introduction to Automated Cartography*
394	*Seminar in the Philosophy of Cartography*
397	*Advanced Topics in GIS*

REGIONAL/INTERNATIONAL DEVELOPMENT/POLITICAL ECONOMY

015	*Introduction to Economic Geography*
027	*Geography of the Third World*
037	*Gender, Space, and Environment*
125	*Development Problems*
127	*Political Economy of Underdevelopment*
129	*Political Economy of Industrial Countries*
130	*Introduction to Latin America*
179	*People, Ecology, and Global Village*
182	*Politics, People, and Pollution*
228	*Management of Arid Lands*
232	*Land and Development in Latin America*
258	*Development and Regional Integration*
265	*Money, Banking, and Public Finance in Developing Countries*
268	*Anthrogeography*
272	*International Division of Labor*
277	*Gender, Resources, and Development*
289	*Problems in Political Economy of Development*
293	*Overcoming World Hunger–Agricultural Research and International Development*
310	*Research Seminar in Development Geography*
336	*Household Economic Behavior and the Geography of Development*
338	*Seminar in Industrial Geography*
357	*Seminar: Approaches to Regional Development Planning*
360	*Development Theories and Philosophies of Change*
369	*Seminar in Environment and Development*
395	*Economic Development and Policy Analysis*

COURSES

011 SURVEY OF GEOGRAPHY/Lecture, Discussion

A survey of major concepts in modern geography. Emphasis is placed on the various approaches to geographic research currently conducted in the Graduate School of Geography. Physical (climatology, soils, biogeography, and landform studies), cultural, historical, economic, urban, and social themes are developed. Designed primarily for freshmen and sophomores. A required course for geography majors.
Mr. Johnson, Mr. Turner/Offered every year

014 INTRODUCTION TO PHYSICAL GEOGRAPHY/Lecture, Laboratory

A basic inquiry into the principles and components of landforms and climates. It provides critical background necessary for evaluating environmental problems. The role of human activities on physical processes is included.
Staff/Offered every year

015 INTRODUCTION TO ECONOMIC GEOGRAPHY/Lecture

Theories about the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and environmental problems. These include overpopulation, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.
Mr. Angel, Staff/Offered every year

017 INTRODUCTION TO CULTURAL GEOGRAPHY/Lecture

An ecological and historical approach to the study of cultures and cultural change in a spatial context. A series of broad themes and problems are illustrated by case studies set mainly in North America. Major themes considered are adaptation to the "natural" environment; culture in prehistory; migration and the creation of cultural areas; the world views of primitive, traditional, and industrial culture; cultural landscape; and the cultural geography of the United States. One discussion section each week in addition to lectures.
Mr. Johnson/Offered every year

018 INTRODUCTION TO URBAN GEOGRAPHY/Lecture, Discussion

Cities are for some a gateway of opportunity–to jobs or to new ways of seeing and living. For others, cities are a prison of poverty and alienation. What are the forces that shape urban life and the development of cities, from the mill towns of New England to Chicago in the 1920s, as well as the dynamic metropolises of Los Angeles and Miami in the contemporary period? Geography 018 confronts these questions and provides a widely ranging introduction to urban geography. In addition to regular lectures, the course also involves workshops and expeditions into the city.
Mr. Angel, Mr. Karaska/Offered every year

019 INTRODUCTION TO ENVIRONMENTAL GEOGRAPHY: THE GLOBAL ENVIRONMENT/Lecture, Discussion

Provides an overview of the physical and humanistic components of major global environmental problems–world food supplies, tropical deforestation, acid rain, ozone layer destruction, and land degradation. Students are introduced to the major biogeochemical cycles, interactions of the atmosphere and hydrosphere, and measurable trends in global ecology. Poverty, world health, population trends, and the roles of science and technology are examined as factors in, and products of, the global environment.
Ms. Emel/Offered every year

027 GEOGRAPHY OF THE THIRD WORLD/Lecture, Discussion

Provides a cross-cultural knowledge and appreciation of Third World societies through a "geo-history" of Latin America, Africa, and Asia. The course is suited to students who have little background or knowledge of the Third World, but who wish to understand the conditions under which the majority of the world's people exist.
Mr. Peet/Offered every year

035 AMERICAN LAND, AMERICAN MIND/Lecture

This course deals with the images, myths, and traditions of the American land and its peoples, e.g., ignoble savage, pristine wilderness, forest primeval, garden, frontier,

great American desert, New England village on the green, dust bowl, smoky bear, pioneer, cowboy, and Los Angeles as both paradise on earth and anti-city. Comparisons are made between Americans' popular traditions of the land and the accepted reality described by scientists. For each tradition an attempt is made to show how and when (1) the images formed and (2) the myths developed. The transformation of myth to tradition is commonly prefaced by erasure of collective memory and furthered when the literate elite present the myth as "fact" to the intelligentsia. Ongoing myth creation and the invention of tradition are highlighted in the last third of the class.
Mr. Bowden/Offered every year

037 GENDER, SPACE, AND ENVIRONMENT/Lecture, Discussion
Students explore how gender is reflected in the landscape, in our settlement and land use patterns, in environmental history, and in our present ecological science and practice from the global to the local level. The class combines lectures, readings, discussions, films, and local field trips. We review feminist and other alternative explanations of the gendered nature of knowledge, access, and use and control of space and resources in a variety of environments—past, present, and possible. Regional focus on New England.
Ms. Rocheleau/Offered every year

101 INTRODUCTORY CASE STUDIES/Lecture, Discussion
Refer to course description under Environment, Technology, and Society 101.
Staff/Offered every semester

108 WORLD POPULATION/Lecture
Is the population of the world growing too fast? Will overpopulation lead to doomsday? To address these questions requires an understanding of the nature of population growth and sociocultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed.
Mr. Turner, Mr. Johnson/Offered periodically

110 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTRODUCTION/Lecture
An introduction to geographic analysis and the role of the computer in assisting this process. The course considers data sampling and descriptive and inferential statistical techniques for analyzing geographic data. Topics include graphic techniques, tests of hypotheses, simple regression, and the analysis of variance. As an integral part of the course, students learn to use computer programs for statistical analysis, data graphing, and computer-assisted cartography. Although no prior exposure to computers or statistics is assumed, the course is suitable for students of all levels and is one for which graduate students may receive credit.
Mr. Karaska/Offered every year

112 BIOGEOGRAPHY/Lecture
Past and present geographical distributions of plant and animal species are considered in relation to biological evolution, species interactions, dispersal strategies, plate tectonics, climatic change, and human activity. Island biogeography and the biogeography of tropical vascular plants are emphasized.
Mr. Herwitz/Offered every year

114 INTERMEDIATE GEOMORPHOLOGY/Lecture
The history of plate tectonics is explored in relation to the uplift of mountains, tectonics, and volcanism. The gradual wearing down of the earth's surface by hydrological processes is emphasized in the latter part of the course. Prerequisite: Geography 014, Geology 100, or permission of instructor.
Mr. Lewis/Offered every year

115 HYDROLOGY/Lecture
Provides an overview of the hydrologic cycle and its major components including precipitation, evapotranspiration, soil moisture, surface water runoff, and groundwater flow. The course focuses upon the role of water as a unifying concept in environmental science. Examines human modification of natural hydrologic regimes. Prerequisite: Geography 014 preferred but not required.
Ms. Emel/Offered every other year

117 CULTURE LANDSCAPE/Lecture
Examines the processes and values that shape the human environment. The fundamental premise is that every culture leaves a record of its presence in its material landscape and that this landscape record can be understood and "read" by the informed observer. Because landscape is a product of culture as well as of nature, it can best be understood using both an insider's (native's) and outsider's perspective. Insights are gained by comparing familiar landscapes with those produced by other cultures. For this reason, the course studies selected Middle Eastern, Indian, Chinese, and European landscapes in addition to the regional landscapes of Northern America. Artistic, literary, historical, and ecological perspectives are brought to bear on the interpretation of ordinary and elite landscapes of fact and symbol.
Mr. Johnson/Offered every other year

118 ENVIRONMENT AND DISASTERS/Lecture
Examination of the basic concepts and processes within the earth sciences, relative to the evaluation of risks and decisions on future policies of land use and resource utilization. The emphasis is on aspects of the environment of particular interest to geographers, geologists, and planners. Prerequisite: Geography 014, Geology 100, or permission of instructor.
Staff/Offered every other year

124 ECONOMY AND ENVIRONMENT/Lecture, Discussion
This course addresses the historic intersection of industrialization, urbanization, and ecology. We examine cases of economic, environmental, and political conflict over the past three hundred years in order to gain historic depth on contemporary issues. London air pollution, New York City water supplies, mechanized fishing in the Pacific, European coal mining, and American forestry product industries will be among the cases we consider. The course objective is to help students envision the relationships between the environment and work, technology, consumption, finance, and other economic activities. Legal and political histories pertinent to these relations are also addressed.
Ms. Emel/Offered every other year

125 DEVELOPMENT PROBLEMS/Lecture, Discussion
Refer to course description under International Development 125.
Ms. Thomas-Slayter/Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/Lecture

Surveys the leading schools of thought on regional development (environmental determinism, modernization theory, dependency/world systems theory, Marxist theories) and looks at contemporary problems of development (the international role of capital, multinational corporations, and environmental destruction in the Third World).
Mr. Peet/Offered every year

129 POLITICAL ECONOMY OF INDUSTRIAL COUNTRIES/Lecture

The advanced capitalist countries are undergoing rapid economic change including an industrial devolution as remarkable as the industrial revolution of the nineteenth century. This course examines the effects of economic change in the United States, Western Europe, Japan, East Asia, and Latin America in the context of theories of global development. Economic and social problems, such as the destruction of employment, unemployment, and regional and community collapse, are emphasized. The course also examines the contradictions of regional economic advance in high technology regions. A survey of regional development policy brings the course to a pragmatic conclusion.
Mr. Peet/Offered every other year

130 INTRODUCTION TO LATIN AMERICA/Lecture

Refer to course description under International Development 130.
Mr. Jones/Offered every year

132 BEFORE AND AFTER COLUMBUS: ANCIENT MIDDLE AMERICA AND THE IMPACT OF THE CONQUEST/Lecture

For at least two and one-half millennia before Columbus reached the Americas, Middle America witnessed the rise and fall of several advanced cultures. These cultures adapted to different environmental zones through creative land use practices that sustained very large populations. The impact of Cortez's penetration of Mexico, however, was devastating. Empires were destroyed, massive depopulation ensued, land use practices were radically altered, and a new political and economic order was instituted. This course explores the pre- and immediate post-Columbus circumstances in Middle America from a cultural and human ecological perspective.
Mr. Turner/Offered periodically

137 TIME AND SPACE IN OLD AND NEW ENGLAND/Lecture

Uses cases from old and New England to demonstrate the skills, methods, and sources of cultural, historical, and humanistic geography in the towns and fields of New England and in texts of both Englands. Dating techniques; prehistoric chronology; estimating past populations; toponymy, linguistic, and lexical evidence; archaeology and the ground itself; archival and literary evidence; aerial photography; vernacular and high style architecture. Skills course for geography majors in cultural/humanistic stream.
Mr. Bowden, Staff/Offered every other year

139 COUNTRY AND CULTURE/Lecture

The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New England, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter-gatherers to

modern suburban encroachment on rural areas. Emphasis is placed on ecological principles that help explain the technocultural modification of rural places.
Mr. Johnson/Offered every other year

141 RESEARCH METHODS IN GEOGRAPHY/Lecture, Discussion
Focuses upon the ways in which social science research is conducted and emphasizes primarily applied research in a problem-solving context. Involves the students in the variety of problems, methodological strategies, and analytical techniques characteristic of current geographical research. Topics include defining a research problem, measurement, sampling, questionnaire design, and modeling.
Ms. Hanson, Mr. Angel/Offered every year

142 CITIES AND CULTURE: THE AMERICAN CITY/Lecture and Field Trip
The course focuses on the development of distinct subcultures in America and on the cultural capitals of the country. Emphasis is on the expression of culture in space and on the agents of cultural change and stability. Detailed studies of cities that have at one time been cultural capitals in America–Boston, Philadelphia, New York City, Chicago, San Francisco, and Los Angeles–consider the origins and effects of this role on each city's structure. The same process is studied in distinctive regional cultural capitals–Charlestown, Newport, Salt Lake City, Santa Fe, and New Orleans.
Mr. Bowden/Offered every year

157 TECHNOLOGY AND SOCIAL CHANGE/Lecture
This course focuses on the interaction between technology and society. Among the topics considered are: the nature of technology and its relationship to society, historical and contemporary case studies of the impact of technology, the nature of technological failures, and forecasts of how technology may change society by the year 2000.
Mr. Mitchell/Offered every year

161 CULTURAL IDENTITIES AND GLOBAL PROCESSES
Refer to course description under Cultural Identity and Global Processes 161.
Ms. Bhachu/Offered every year

170 DIVIDED CITIES, CONNECTED LIVES/Lecture, Discussion
Focuses on the definition and importance of social areas within cities, patterns and processes of residential segregation, the role of the neighborhood in urban life, and the functioning of the urban housing market. Also examines urban planning approaches to solving housing and neighborhood problems.
Ms. Hanson/Offered every year

174 GREEKS AND BARBARIANS IN THE ANCIENT ECUMENE/Lecture, Discussion
The ancient Greeks left a diverse descriptive and cartographic record of exploration and discovery. We follow their footsteps in text, map, and photographic imagery as they encounter the "barbarian" world, and with the aid of these tools as well as modern archaeological data, we gradually reconstruct the ancient ecumene in its physical and cultural diversity. A historical perspective course; first-year students and sophomores only.
Mr. Koelsch/Offered every other year

175 URBANIZATION IN THE THIRD WORLD/Lecture, Discussion
This course examines contemporary processes of urbanization in the Third World. Issues addressed include primate cities, the links between urban and rural economies, and the internal structure of cities. Particular attention is paid to problems of Third World urbanization and emerging policy responses. Prerequisite: Geography 018 or permission.
Mr. Karaska/Offered every other year

176 ENVIRONMENT 199_/Lecture, Discussion
An assessment of major environmental issues, particularly those global in nature, confronting human society in the current year. Attention to problems requiring human intervention: rapid population growth, consumption values, global poverty, ozone depletion, and hazardous waste disposal. The interplay between environmental change and public policy is stressed. Intended for those desiring introductory or general knowledge.
Mr. Kasperson/Offered every year

177 CULTURAL ECOLOGY IN ARID LANDS/Lecture, Discussion
Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.
Mr. Johnson/Offered periodically

179 PEOPLE, ECOLOGY, AND GLOBAL VILLAGE/Lecture, Discussion
Integrates issues of ecology and political economy from local to global scale case studies, starting from a close-up view of people in environmental "hot spots" and following their linkages into the world economy and planetary ecosystems. Students explore the connections between international, environmental, and economic policy and the everyday realities and possible ecological futures of people in environments ranging from the Amazon rainforest to the streets of Worcester, Massachusetts.
Ms. Rocheleau/Offered every year

181 INTRODUCTION TO CARTOGRAPHY/Lecture, Laboratory
An introduction to the fundamental principles underlying the graphic representation and geographic description of earth phenomena. The examination ranges from concepts of space and spatial representation to descriptive techniques and the perceptual basis for graphic communication. The laboratory exercises allow a "hands on" exploration of both manual and automated map production and analysis techniques.
Mr. Steward, Mr. Eastman/Offered every year

182 POLITICS, PEOPLE, AND POLLUTION/Lecture, Discussion
Refer to course description under International Development 182.
Ms. Thomas-Slayter, Mr. Schwarz/Offered periodically

189 REMOTE SENSING OF THE ENVIRONMENT/Lecture, Laboratory
Offers a broad introduction to one of the most powerful tools now being developed

for surveying geographical phenomena. Covers the use of remotely sensed data, such as air photos and a variety of satellite imagery, to provide answers to many of the problems related to our physical and human environment.
Mr. Steward/Offered every year

196 CULTURE AND SPORT/Lecture, Discussion
Readings in humanities "texts," meetings focused on film, and frameworks from the social sciences are used to explore a number of American games/sports (and their social English progenitors) as expressions of American history, character, values, environment, self-image, mentality, economic ethos, and institutions. Themes are: (1) the relation between the character and structure of the games and their success among different groups of Americans; (2) the timing of adoption of the games; (3) explanations for the transformation of the games from British and early forms; (4) deviation of professional and amateur variants; and (5) scale and nature of sport as a business. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, are considered. Classes meet weekly. The class period is extended on alternate weeks for special events (e.g., films).
Mr. Bowden/Offered every other year

200 LAND DEGRADATION/Seminar
Resource use has often resulted in the degradation of aquatic and terrestrial productivity. The roles of agricultural deforestation and industrialization on the land degradation problem are examined both in a contemporary and a historical framework.
Mr. Lewis/Offered periodically

201 OCEANIC ISLANDS: GEOLOGY AND ECOLOGY/Lecture, Discussion
This field-oriented course on the biology and geology of Bermuda consists of three parts: (1) weekly meetings during the first half of the spring semester involving lectures, readings, and discussions; (2) a one-week field and research experience in Bermuda during spring vacation; and (3) presentation of research results during the second half of the spring semester.
Mr. Herwitz, Mr. Livdahl/Offered every year

204 WATERSHED ECOLOGY/Seminar
An advanced seminar that examines the current scientific literature on the functional ecology and biogeochemistry of contrasting terrestrial ecosystems. Topics covered include the inputs, outputs, and internal transfers of water and nutrients in temperate hardwood forests, pine barrens, baldcypress swamps, tropical rainforests, montane cloud forests, eucalypt woodlands, and arid environments. The processes of rock weathering, leaching from above ground vegetative surfaces, nutrient uptake by plants, and stream discharge of nutrients are emphasized. The Hubbard Brook ecosystem study is considered in detail with a field trip to the Hubbard Brook experimental watershed in the White Mountains.
Mr. Herwitz/Offered every other year

210 ENVIRONMENT AND SOCIETY/Lecture, Discussion
A central theme of this course is to analyze the relationship between human societies, especially those that are industrialized, and the natural environment. Among the topics to be considered are the impact of industrialization on nature, the population-resource debate, the rise of modern environmental concern and political action,

pesticides, and energy policy issues.
Mr. Mitchell/Offered every year

211 GEOMORPHOLOGY OF HUMID TROPICS/Lecture, Discussion
The humid tropics–home of the rainforest, dry forest, and savanna–are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, and the devastating impact of human intervention are among the topics explored. Prerequisite: Geography 114, or permission of instructor.
Mr. Lewis/Offered every other year

213 FOREST HYDROLOGY FIELD METHODS/Research, Discussion
Students have a unique opportunity to conduct field research and gain experience acquiring hydrological data on evapotranspirational losses from local pine plantations and broadleaved deciduous forests. Field and laboratory research leads to the preparation of a formal article that conforms to the specifications of a scientific journal. The objective of the research is to evaluate how different vegetation types affect water resources. Prerequisite: permission of instructor.
Mr. Herwitz/Offered every other year

215 FLUVIAL PROCESSES IN GEOMORPHOLOGY/Lecture, Discussion
Focuses on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition are explored. Prerequisite: Geography 114 or permission of instructor.
Mr. Lewis, Staff/Offered periodically

216 THE PHYSICAL ENVIRONMENT OF ARID LANDS/Lecture, Discussion
Presents an analysis of the processes acting on landscapes and the atmospheric environment of arid areas. The focus is on climate and related geomorphic processes. The course emphasizes the arid Southwest of the United States and the African Sahel. Prerequisite: Geography 014, Geology 100, or permission of instructor.
Mr. Lewis/Offered every other year

217 HISTORY OF CARTOGRAPHY/Lecture
A basic survey of the history of mapping until about 1900. Topics include the methodological basis of investigations into the subject; maps of primitive peoples; the classical, medieval, and Renaissance periods; the rise of national surveys; the relationship of mapping to exploration; and the cartography of North America.
Mr. Steward/Offered every year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT/Seminar
The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies. Permission of instructor required.
Mr. Lewis/Offered every other year

226 SEMINAR: ENVIRONMENTAL HAZARDS–THEORY, MODELS AND APPLICATIONS/Lecture, Discussion
A seminar for advanced students on the theory and methods of hazard assessment and social response. The course covers natural, technological, and global hazards and

includes such topics as human vulnerability, disasters, risk perception, social amplification of risk, social learning, and corporate management of risk.
Mr. Kasperson/Offered every other year

228 MANAGEMENT OF ARID LANDS/Lecture, Seminar
The drylands of the world present special development problems. Peculiarly prone to degradation, these regions face the difficult task of providing support to a rapidly growing population. Viewed in a historical perspective, the demography, behavioral characteristics, social and livelihood systems, and physical constraints of dryland ecosystems are analyzed. Special attention is paid to evaluating the management strategies currently employed in their use, identifying the obstacles constraining their growth, and assessing their future development potential.
Mr. Johnson/Offered every other year

232 LAND AND DEVELOPMENT IN LATIN AMERICA/Lecture, Discussion
Refer to course description under International Development 234.
Mr. Jones/Offered every year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/Lecture, Discussion
A synoptic view of concepts and practices concerning health and disease, based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health. Emphasis on societal interactions with disease environments during the last hundred years and their intellectual consequences. Not open to freshmen.
Mr. Koelsch/Offered every other year

236 SEMINAR: INTERNATIONAL AND COMPARATIVE RESOURCE POLICIES/ Lecture, Seminar
Deals with international and comparative law/policy of water resources, fisheries, land, oceans and seas, wildlife, air, and nuclear power. Within the context of each of these topical areas, the course objectives are to define the "resource problem(s)," analyze existing institutions (i.e., property rights, management systems, and allocation regimes) and their responses to the problems, and consider conceptual guidelines for improving institutional arrangements and individual actions.
Ms. Emel/Offered every other year

240 THE END OF AMERICA: LOS ANGELES/Lecture, Discussion
The modern city reflects the values and forces that have shaped Western culture in its westward course. In the last century the history of Los Angeles–the western end of American space–embodies better than that of any other city the polemic between traditional and technological notions of the modern city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit, perhaps even of the end of that spirit. This course is designed to explore the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles.
Mr. Bowden/Offered every other year

242 CITIES AND CULTURE: THE EUROPEAN CITY/Lecture
Examines the city as a center of cultural stability and cultural change as reflected in urban form. Particular focus upon the notion of creativity in the city. Case studies

include London, Edinburgh, Paris, Vienna, and Manchester.
Mr. Bowden/Offered every other year

244 GENDER, WORK, AND SPACE/Seminar

How do gender, race, class, and ethnicity propel certain types of people into certain types of work? What role do location and space play in shaping and sustaining such divisions within the labor force? How have people explained the fact that women, youths, and minorities hold jobs in the paid work force that are distinctly different from the jobs held by other workers? How can we evaluate the validity of these competing explanations? How can a geographic understanding of gender, class, and ethnicity help explain the current restructuring of the global economy? How effective have women been (or can they be) in organizing to improve their economic and social status? These are among the questions we tackle; the course materials focus on urban, industrialized settings from the local to the global scale.
Ms. Hanson/Offered every other year

246 TECHNOLOGY ASSESSMENT/Seminar

Refer to course description under Environment, Technology, and Society 250.
Mr. Renn/Offered every year

247 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTERMEDIATE/Lecture, Laboratory

Focuses on the following topics: multiple correlation and regression (including the analysis of residuals); analysis of covariance, dummy variables, and other applications of the linear model; and multivariate extensions of analysis of variance. In the labs associated with this course, students work with the BMDP and SPSS software packages and are introduced to computer programming. Prerequisite: Geography 110.
Mr. Ratick/Offered every year

249 SPATIAL ANALYSIS/Lecture

The fundamental purpose of spatial analysis is to describe, evaluate, and predict the patterns of physical and social relations between and among places. This course provides a systematic development of the theories and methods used for spatial analysis with specific emphasis on those most applicable to decision making. Topical areas for potential application of these techniques include environmental assessment, transportation analysis, and resource management. The ways in which these methods can be used with geographical information systems are developed.
Mr. Ratick/Offered every other year

251 RACE, MIGRATION, GENDER, AND ETHNICITY

Refer to course description under Cultural Identity and Global Processes 271.
Ms. Bhachu/Offered every other year

252 LOCATING HAZARDOUS FACILITIES/Seminar

This seminar provides a problem-oriented forum to study the problem of siting hazardous facilities. The course includes a review of the theoretical foundations that relate to facility location decisions, including discussions of efficiency and equity issues, an evaluation of analytical methods that have or can be applied to this policy decision problem, and a critical analysis of specific facility location case studies. The course consists of lectures, hands-on problem analysis, and focused class discussions.
Mr. Ratick/Offered periodically

253 NEW ENGLAND LANDSCAPE/Seminar, Field Trips

The course is introduced by an examination of the idea of landscape within the geographic endeavor, followed by a history of landscape studies in New England. Substantive field and library work focuses on houses and buildings, fences, walls, land use, and settlement patterns as they hang together to give character and distinctiveness–first, to the nine subcultural regions of coastal and valley New England settled in the "First Period" (to 1725); and second, to the areas of upland New England where the Yankee "folk-housing landscape" solution covered the land in the eighteenth century. An assessment of the landscape impact of commercial villages and greens and of the mills and mill villages, created 1790-1852, completes the course. Five half-day field trips to the Central Uplands and to the Connecticut Valley. Two three-day field trips: one to southern Rhode Island, the Old Colony and the Cape, and another to the North Shore, eastern New Hampshire, and southern Maine. Motel accommodations and food on these weekend trips cost $100-130 total.
Mr. Bowden/Offered every other year

254 URBAN TRANSPORTATION: PROBLEMS AND PROSPECTS/Lecture, Discussion

What are the dimensions of the urban transportation problem? How can we analyze the problem so as to propose policies that might help to solve it? Topics include transportation and land use, transportation and energy, the car vs. public transit, and transportation and equity issues. We examine aggregate and disaggregate approaches to analyzing patterns of spatial behavior and evaluate the relative effectiveness of these approaches in posing solutions to urban transportation problems.
Ms. Hanson/Offered periodically

255 RISK PERCEPTION/Seminar

Refer to course description under Environment, Technology, and Society 258.
Mr. Renn/Offered periodically

257 THEORY OF MULTI-OBJECTIVE RESOURCE EVALUATION/Lecture

Introduction to the theory of multi-objective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.
Mr. Ratick/Offered periodically

258 DEVELOPMENT AND REGIONAL INTEGRATION/Seminar

Refer to course description under International Development 258.
Ms. Seidman/Offered periodically

259 IMAGES, SYMBOL, AND MYTH IN THE AMERICAN WEST/Lecture, Discussion

From the first, Americans made the West what they wanted it to be: Garden of the World, El Dorado, Cibola, Passage to India, Great American Desert, Great Prairie, or Garden in the Grassland. A westering people invested this land with heroes, hunters, horse-riding Indians, trappers, scouts, cowboys, oil magnates, land boomers, and movie tycoons. The West presents a kaleidoscope of images of both outsiders and insiders, and this course considers the origins and changes in these images, their effects on behavior, and their imprint on the land. Emphasis throughout is on the methods and skills of those concerned with reconstructing the geographical knowl-

edge (geosophy) of people of different backgrounds, roles, regions, and times.
Mr. Bowden/Offered every other year

261 GIS APPLICATIONS FOR ENVIRONMENTAL MANAGEMENT/Seminar
Refer to course description under International Development 261.
Mr. Jones/Offered every year

262 URBAN ECONOMIC GEOGRAPHY/Seminar
The past two decades have witnessed dramatic changes in the American urban system and in the internal structure of cities. At the same time, this has been a period of particular vitality in the development of theory, new perspectives, and alternative discourse about the city and the contemporary urban experience. Geography 262 examines these recent developments in urban geography and lays out in some detail a political economy of urbanization in advanced capitalist societies.
Mr. Angel/Offered every other year

265 MONEY, BANKING, AND PUBLIC FINANCE IN DEVELOPING COUNTRIES/Seminar
Refer to course description under International Development 265.
Ms. Seidman/Offered periodically

266 QUANTITATIVE METHODS IN RISK ANALYSIS/Seminar
Refer to course description under Environment, Technology, and Society 265.
Ms. Brown/Offered every year

268 ANTHROGEOGRAPHY/Seminar
For students with a background in anthropology and geography, this course looks at problems of development among tribal peoples.
Mr. Peet/Offered every other year

271 GROUNDWATER HYDROLOGY AND MANAGEMENT/Lecture, Discussion
An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.
Ms. Emel/Offered every other year

272 INTERNATIONAL DIVISION OF LABOR/Seminar
Refer to course description under International Development 272.
Ms. Seidman/Offered periodically

273 SEMINAR IN URBAN GEOGRAPHY/Seminar
Through readings and discussions, this seminar focuses on major research problems in urban geography. Prerequisites: Geography 170 or 262, or permission.
Ms. Hanson, Mr. Angel/Offered every other year

274 SEMINAR IN CARTOGRAPHIC DESIGN/Seminar
Explores the common ground between graphic design/fine arts and cartography/geography in the area of map design. Draws upon a variety of approaches and methodologies, seeking points of consensus and clarity that can aid in both the understanding and making of maps. Capitalizes upon the different skills and interests of the professors involved and brings students into an active seminar exchange.

Aspects covered include typography, color, psychophysical and cognitive approaches, aesthetics, communication and design theory, and the ideas of metacartography.
Mr. Steward/Offered periodically

275 CULTURE, CONSUMPTION, AND CLASS IN LOCAL AND GLOBAL CONTEXTS

Refer to course description under Cultural Identity and Global Processes 275.
Ms. Bhachu/Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/Lecture, Seminar

A mystique exists about the humid tropics. Mid-latitude biases have led to inaccurate assessments of the composition of these wet, hot lands; of traditional uses of them; and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region.
Mr. Turner, Ms. Rocheleau/Offered periodically

277 GENDER, RESOURCES, AND DEVELOPMENT/Seminar

Considers the gender division of control, responsibility, knowledge, labor, and benefits in the management of natural resources in developing countries. Readings, lectures, and discussion focus on the perspectives and potential of rural women in Africa, Latin America, and Asia as major actors in natural resource use and management and in local, regional, and global ecological transformations.
Ms. Rocheleau/Offered every other year

280 URBAN ECOLOGY: CITIES AS ECOSYSTEMS/Lecture, Discussion

Students explore the ecology and physical geography of cities as systems built, inhabited, and "managed" by people. This special class of ecosystem is often neglected except in very specialized studies of pollution, yet it is home to many of the world's people and to a surprising number of plant and animal species as well. Readings, lectures, discussion, and written work combine landscape and systems ecology with physical and urban geography to broaden our understanding of city environments, both present and possible.
Ms. Rocheleau/Offered periodically

281 TROPICAL ECOLOGY/Lecture, Discussion

Examines the structure and function of several major tropical ecosystems (rainforests, savannas, wetlands, coastal zones, deserts) from the perspective of systems ecology. Readings, lectures, and discussions focus on energy flows, material cycles, and species diversity and distribution. The class also explores the stability and productivity of tropical ecosystems (especially forests and savannas) under conditions of stress and their responses to widespread clearing and land use change.
Ms. Rocheleau/Offered every year

283 NATURE AND CULTURE IN THE ANCIENT WORLD/Discussion

Selected problems of nature-society relationships in the Greco-Roman world in the light of modern environmental and social science. Prerequisite: six hours of classics or of geography, or permission of instructor.
Mr. Koelsch/Offered every other year

284 LANDSCAPES OF THE MIDDLE EAST/Lecture, Seminar

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analysis.
Mr. Johnson/Offered every other year

285 CAPSTONE SEMINAR: THEMES IN GEOGRAPHY/Seminar

A requirement for all geography majors, the capstone seminar examines a range of contemporary themes in the subfields of geographic research found at Clark. The seminar focuses on an example region, the Blackstone Valley, as a setting in which the interplay of nature, society, values, and historical forces have shaped geographical space. Several field trips and both group and individual research projects are course requirements. The course is restricted to geography majors in their senior year.
Mr. Johnson/Offered every year

289 PROBLEMS IN POLITICAL ECONOMY OF DEVELOPMENT/Seminar

This course gives background material on development in the Third World. Class members then outline a policy framework for the development of an impoverished Third World region, usually Southern Africa.
Mr. Peet/Offered every year

290 INTRODUCTION TO GIS/Lecture, Laboratory

A broad introduction to Geographic Information Systems and associated techniques in digital Image Processing. Lectures stress the fundamental logic and scope of problem solving using each of the two main types of systems: raster and vector. Laboratory exercises and demonstrations allow students to become familiar with the two predominant microcomputer systems in use today–IDRISI (developed at Clark) and Arc/Info. Although the course is computer-oriented, no programming is involved.
Mr. Eastman/Offered every year

291 THE JONAS AND SUSAN CLARK COLLECTION/Seminar

Refer to course description under Art History 250.
Ms. Grad/Offered every other year

292 CARTOGRAPHIC DESIGN AND PRODUCTION/Lecture, Laboratory

A course concerned with the design and production of full-color printed maps. The principles and procedures of offset lithographic printing, photomechanical production (e.g. scribing), phototypesetting, process photography, process color, and nonprinting reprographic techniques are discussed. In the laboratory sections, students compile, design, and produce a full-color map to a color proof stage. Prerequisite: Geography 181 or permission of instructor.
Mr. Eastman/Offered every other year

293 OVERCOMING WORLD HUNGER–AGRICULTURAL RESEARCH AND INTERNATIONAL DEVELOPMENT/Seminar

Refer to course description under International Development 293.
Mr. Jones/Offered periodically

294 PROBLEMS IN CARTOGRAPHY/Seminar

An examination of perennial and new problems in cartography ranging from considerations of a philosophical and historical nature to the practical concerns of contemporary mapping. Prerequisite: permission of instructor.
Mr. Steward, Mr. Eastman/Offered every year

295 AGRICULTURE IN THIRD WORLD ECONOMIES/Seminar

Consumption and commodity agriculture in the non-Western world is explored. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on theories of agricultural change.
Mr. Turner/Offered periodically

296 REMOTE SENSING PROJECT WORK/Lecture, Laboratory

A more detailed consideration of the use of remote sensing for environmental analysis, particularly land use. Includes a class remote sensing project and fieldwork.
Mr. Steward, Mr. Eastman/Offered periodically

297 APPLICATIONS RESEARCH IN GIS/Seminar, Project

A seminar course in which students explore the use of GIS as a geographic research tool through the conduct of a directed project. Successful completion of the course requires a completed project using the IDRISI system, seminar presentations of the project proposal and mid-term progress report, a seminar presentation on a specific applications research area, a final presentation in a format suitable for a professional meeting, and a written paper on the project in a format suitable for submission to a professional journal.
Prerequisite: Geography 290 *and* permission of instructor (limited enrollment).
Mr. Eastman/Offered every year

298 INTRODUCTION TO AUTOMATED CARTOGRAPHY/Lecture

A hands-on introduction to the fundamentals of automated cartography. Using color graphics, microcomputers, and the PASCAL computer language, the course explores the potential and reality of computer-assisted geographic display and analysis. Topics covered include programming logic for computer graphics, data structures for geographic information, thematic and general reference mapping, and geographic information systems. Programming is taught as an integral part of the course, which requires no previous computer background. Prerequisite: Geography 181 or permission of instructor.
Mr. Eastman/Offered every year

300 ADVANCED TOPICS IN PHYSICAL GEOGRAPHY/Seminar

Theories and concepts in specific areas of physical geography are examined at an advanced graduate level in the context of a research seminar. Specific topics are focused on research interests of the faculty and students taking the course. Prerequisite: permission of instructor.
Mr. Lewis/Offered periodically

304 SEMINAR ON WATERSHED ECOLOGY/Seminar

An advanced seminar that examines the current scientific literature on the functional ecology and biogeochemistry of contrasting terrestrial ecosystems. Topics covered include the inputs, outputs, and internal transfers of water and nutrients in temperate hardwood forests, pine barrens, bald cypress swamps, tropical rainforests, montane

cloud forests, eucalypt woodlands, and arid environments. The processes of rock weathering, leaching from above ground vegetative surfaces, nutrient uptake by plants, and stream discharge of nutrients are emphasized. The Hubbard Brook ecosystem study is considered in detail with a field trip to the Hubbard Brook experimental watershed in the White Mountains.
Mr. Herwitz/Offered every other year

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY/Seminar

Designed for thesis- and dissertation-level students working in the areas of resources, development, ethno-ecology, social theory, and political economy in developing countries, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice. Places strong emphasis on ethnographic approaches and qualitative field methods. Prerequisite: Geography 314 or permission of instructor. Meets graduate skills requirement in Geography and International Development.
Ms. Rocheleau/Offered every other year

314 RESEARCH DESIGN, RESEARCH METHODS/Seminar

Covers all the major topics in research design and methodology: e.g., problem definition, research strategies, measurement, sampling, and data collection techniques and procedures.
Mr. Mitchell/Offered every year

318 EXPLANATION IN GEOGRAPHY/Seminar

Varying views of explanation, including positivist, realist, and conventionalist, are explored. Particular attention is given to the tensions between structural and nonstructural explanation and the integration of theory and empirical facts. Meets first-year core course requirement for geography graduate students.
Mr. Angel/Offered every year

327 GEOGRAPHY AND SOCIAL THEORY/Seminar

Explores major themes in contemporary social theory as they relate to geographical studies.
Mr. Angel, Mr. Peet/Offered every other year

330 SEMINAR IN CULTURAL AND POLITICAL ECOLOGY/Seminar

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology. Prerequisite: Geography 177 or equivalent.
Mr. Johnson, Mr. Turner/Offered periodically

336 HOUSEHOLD ECONOMIC BEHAVIOR AND THE GEOGRAPHY OF DEVELOPMENT/Graduate Seminar

Refer to course description under International Development 336.
Staff/Offered periodically

338 SEMINAR IN INDUSTRIAL GEOGRAPHY/Seminar

Surveys recent trends in industrial geographic theory in response to the internationalization of capital and the rapidly changing futures of old industrial regions.
Mr. Peet/Offered periodically

342 SEMINAR IN HUMAN DIMENSIONS OF GLOBAL CHANGE: DRIVING FORCES/Seminar

Human-induced global environmental change has reached unprecedented magnitudes and now includes direct impacts on the biogeochemical flows that sustain the biosphere. Social science understanding of the human dimensions of this scale and kind of change is poorly developed, and the research agenda to address it is still emerging. This seminar explores the role of humankind as the driving force or source of global change. Emphasis is placed on the development of a framework that helps to identify these forces and to understand their role by situation (local/regional variability) and by spatial scale.
Mr. Turner/Offered periodically

343 SEMINAR IN HUMAN DIMENSIONS OF GLOBAL CHANGE: SOCIETAL RESPONSES/Seminar

This course explores societal responses to and management of global environmental change. Major topics to be addressed are: societal response pools, adaptation vs. adjustment, surprise, vulnerability analysis, policy analysis, social learning, and regime theory.
Mr. Kasperson/Offered every other year

345 RESEARCH SEMINAR IN ENVIRONMENTAL PERCEPTION/Seminar

Examines theories and major research on the human perception of the natural and social environment and the relationship between perception and behavior. Attention is given to the relevant methodologies. Part of the semester is devoted to students' research interests.
Mr. Mitchell/Offered periodically

350 NATURE, SOCIETY, AND TECHNOLOGY/Seminar

Examines theories and major research findings on the relationship between human societies and the natural environment.
Mr. Mitchell/Offered every other year

351 SEMINAR IN RESOURCE GEOGRAPHY: THEORY AND METHOD/Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.
Ms. Emel/Offered every other year

355 SOCIAL FORESTRY AND DEVELOPMENT/Seminar

Considers the importance of trees and forests to the social and ecological well-being of people, with an emphasis on the interests of rural people in Africa, Asia, and Latin America. The class examines forest resources as a growing focus of political and economic action at local, national, and international levels during the coming decade. After a broad review of the field, students concentrate on case study examples of technical and policy innovations in social forestry and agroforestry.
Ms. Rocheleau/Offered every other year

357 SEMINAR: APPROACHES TO REGIONAL DEVELOPMENT PLANNING/Seminar

This graduate seminar is intended to provide an understanding of the issues encountered in development intervention: issues of growth and equity, of sectoral emphasis, of spatial distribution, and of relations between classes, regions, states, and

natural resources. Through a review of the literature on development economics, political economy, growth models, spatial analysis, modernization theories, and rural-urban dynamics, this course focuses on concepts of the region as the unit for development planning and intervention.
Mr. Karaska/Offered every year

360 DEVELOPMENT THEORIES AND PHILOSOPHIES OF CHANGE/Seminar
Refer to course description under International Development 360.
Ms. Seidman, Staff/Offered every year

362 SEMINAR IN GEOMORPHOLOGY/Seminar
Explores patterns of thought in modern geomorphology focusing particularly on fluvial and mass wasting processes acting directly on hill slopes, and lands affected by human activities.
Staff/Offered periodically

368 COLLOQUIUM: THE DEVELOPMENT OF WESTERN GEOGRAPHIC THOUGHT/Discussion
The colloquium examines the principal orientations, themes, and debates within emergent professional geography communities in the nineteenth and twentieth centuries and the professional structure of the field as it exists in research, educational, and applied contexts. Designed primarily for entering graduate students in geography.
M Koelsch/Offered every year

369 SEMINAR IN ENVIRONMENT AND DEVELOPMENT/Seminar
The complex, often counter-intuitive, linkages between nature, society, and technology have produced more failures in attaining development objectives than successes. The seminar focuses on exploring reasons and explanations for this mixed result. Case studies from a wide range of economic, social, and environmental settings are examined to isolate principles of successful development.
Ms. Rocheleau, Mr. Johnson/Offered periodically

370 ANIMAL AGRICULTURE/Lecture, Discussion
Animals and humans have a long history of close association. First as hunters and then as domesticators, humans have relied on animals for food, fiber, labor, and companionship. The ecology of many diseases also links people to the animals that they exploit. Today animals play an increasingly important role in efforts to increase food production and to improve diet quality in support of a growing human population. Both terrestrial and aquatic animal systems, and the theory and practice of their intensified exploitation, are examined in this seminar.
Mr. Johnson/Offered every other year

373 SEMINAR IN URBAN GEOGRAPHY/Seminar
Through readings and discussion, this seminar focuses on major research problems in urban geography. Each student formulates a research problem and designs and executes a research project. Prerequisite: permission of instructor.

Ms. Hanson, Mr. Angel/Offered every other year

394 SEMINAR IN THE PHILOSOPHY OF CARTOGRAPHY/Seminar
This seminar deals with the need, in the light of significant technological advances in

the mapping sciences, to reconsider the fundamentals and the scope of cartography. In particular, it focuses on the need to closely examine the purposes behind mapping and the interlinking demands of data, design, structures, scale, generalization, aesthetics, information, and communication.
Mr. Steward/Offered periodically

395 ECONOMIC DEVELOPMENT AND POLICY ANALYSIS/Seminar
Refer to course description under International Development 395.
Ms. Seidman/Offered periodically

397 ADVANCED TOPICS GIS/Lecture, Laboratory
An advanced course in GIS concentrating on issues of database development, error and decision making. Topics include geodesy, projections, error sources, assessment and propagation, analysis under conditions of uncertainty, and multi-criteria and multi-objective decision making. The course also incorporates a seminar section on GIS research themes, and a project component intended as a vehicle for learning the Arc/Info vector-based system. Prerequisite: Geography 290 or permission of instructor.
Mr. Eastman/Offered every year

Geology

PARTICIPATING FACULTY

Jacque L. Emel, Ph.D.: water resources, soils
Stanley R. Herwitz, Ph.D.: geomorphology, hydrology, paleoecology
Laurence A. Lewis, Ph.D.: geomorphology, soils

UNDERGRADUATE COURSES

No formal program in geology exists, but several introductory courses are offered each year. Students interested in the geological sciences should contact the Graduate School of Geography or one of the participating faculty to plan an appropriate major leading to graduate work in the area.

100 INTRODUCTION TO GEOLOGY/Lecture
An introduction to the basic principles of physical and historical geology. Topics covered include the formation of earth and earth materials, plate tectonics, structural geology, radiometric dating, paleontology, glacial processes, and the history of life. The processes that shape the surfaces of other planets in our solar system are also considered.
Mr. Herwitz/Offered every year

114 GEOMORPHOLOGY/Lecture
The theory of plate tectonics is explored in relation to the uplift of mountains, tectonics, and volcanism. The gradual wearing down of the earth's surface by

hydrological processes is emphasized in the latter part of the course. Prerequisite: Geography 014, Geology 100, or permission of instructor.
Mr. Lewis/Offered every year

118 ENVIRONMENTAL GEOLOGY/Lecture
Examination of the basic concepts and processes within the earth sciences relative to the evaluation of risks and decisions on future policies of land use and resource utilization. The emphasis is on aspects of the environment of particular interest to geographers, geologists, and planners. Prerequisite: Geography 014, Geology 100, or permission of instructor.
Staff/Offered every other year

201 OCEANIC ISLANDS: GEOLOGY AND ECOLOGY/Lecture, Discussion
This field-oriented course on biology and geology of Bermuda consists of three parts: (1) weekly meetings during the first half of the spring semester involving lectures, readings, and discussions; (2) a one-week field and research experience in Bermuda during spring vacation; and (3) presentation of research results during the second half of the spring semester.
Mr. Herwitz, Mr. Livdahl/Offered every year

211 GEOMORPHOLOGY OF HUMID TROPICS/Lecture, Discussion
The humid tropics–home of the rainforest, dry forest, and savanna–are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, and the devastating impact of human intervention are among the topics explored. Prerequisite: Geography 114, Geology 114, or permission of instructor.
Mr. Lewis/Offered every other year

215 FLUVIAL GEOMORPHOLOGY/Lecture, Discussion
The focus is on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition are explored. Prerequisite: Geography 114, Geology 114, or permission of instructor.
Mr. Lewis, Staff/Offered periodically

250 PLANETARY GEOLOGY/Research Seminar
Discussion sessions on the geological significance of imagery of the moons and rocky planets of our solar system. Photographic and digital image processing procedures are examined in detail. Assigned readings are from the textbook *Planetary Landscapes* and recent publications from the journal *Icarus.* There are quizzes and exams on the material covered. The students also pursue independent research projects on planetary geomorphology using the available imagery. Enrollment in the course requires successful completion of Geology 100, *Introduction to Geology*. Background in remote sensing preferred.
Mr. Herwitz/Offered every other year

271 HYDROGEOLOGY/Lecture, Discussion
An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.
Ms. Emel/Offered every other year

German

See Department of Foreign Languages and Literatures.

Government and International Relations

DEPARTMENT FACULTY

Cynthia H. Enloe, Ph.D., *chair:* women and politics, militarization, Asian politics, British politics, ethnic and racial politics

John C. Blydenburgh, Ph.D.: elections, polling, U.S. national politics, political psychology

Brian J. Cook, Ph.D.: U.S. public policy, public administration, environmental politics, bureaucratic politics

Beverly C. Grier, Ph.D.: African politics, international development, women's studies, U.S. black politics

Sharon Perlman Krefetz, Ph.D.: U.S. urban politics, suburban politics, women and politics

Mark Miller, Ph.D.: American government, politics of law and the judiciary, Congressional politics, lawyers and politics

Knud Rasmussen, Ph.D.: political theory, European politics, business and politics

Zenovia A. Sochor, Ph.D.: Soviet Union and its successor states, comparative politics, foreign policy

Robert J. Vitalis, Ph.D.: international relations, political economy, Middle East politics

ADJUNCT FACULTY

Douglas J. Little, Ph.D.: Department of History

Stefan Tanaka, Ph.D.: Department of History

Barbara P. Thomas-Slayter, Ph.D.: Department of International Development

VISITING FACULTY

George M. Lane, M.A.: U.S. foreign policy, arms control, Middle East politics, U.S.-European relations

UNDERGRADUATE PROGRAM

The study of politics at Clark University is the study of some of the most important questions that face people of all countries. Why do regimes collapse and what replaces them? What are the rights of the individual versus the rights of the state? How can public policies reduce unequal relations between women and men, and between different racial groups? Most important, who decides such questions and how? The department offers courses that address these questions and others in international relations, in American politics, and in comparative politics. The aim of the curriculum is to provide analytic concepts, relevant information, tools for investigation, and theoretical bases–all designed to enable the student to develop her or his own answers to these questions.

REQUIREMENTS FOR THE GOVERNMENT MAJOR

The major is organized in such a way as to provide a general introduction to the study of politics, as well as an opportunity to explore one particular *subfield* in greater depth. The choice of subfields allows a student to concentrate in one area of politics. There are three subfields offered by the Government Department: American politics and public policy, comparative politics, and international relations.

A Government major must take fourteen courses in all for the major. Although the number of required courses is fixed, students have considerable leeway in choosing particular courses. Most of the courses are in the Government Department. A few are from disciplines outside of the Government Department; these courses are intended to complement the study of politics with other perspectives, as well as to explore the relationships between government and other essential sectors of society. The fourteen required courses are divided into two categories:

General government requirements: seven courses
Subfield specialization requirements: seven courses

General Government requirements

Seven courses:

(1) one subfield introductory course (in addition to the introductory course in one's chosen subfield);
(2) the economics course, *Issues and Perspectives*, Economics 10;
(3) one course in normative political theory, taken in the Government Department (Government 203, 205, 206, or 229);
(4) one course in research methods and skills, Government 107;and
(5-7) three government courses from outside one's chosen subfield.

Subfield specialization requirements

Seven courses:

(8) the introductory course to one's chosen government subfield (*Introduction to American Government* or *Introduction to Comparative Politics* or *Introduction to International Relations*;) [Note: one can take History 169 or Government 169 to fulfill this introduction to international relations requirement.]
(9-11) three additional government courses in one's chosen subfield (one of these three must be in the form of a seminar in one's subfield, taken in the junior or senior year); and
(12-14) three courses, related to the subfield, from *outside* the Government Department. (A list of related courses is available from the Government and International Relations Department Office.) One of these three courses must be in History. The two specific "related" courses should be worked out with one's Government Department advisor.

In summary, a total of fourteen courses–ten in government, one in economics, one in history and two others from related disciplines–must be taken to fulfill the requirements for the government major.

THE INTERNATIONAL RELATIONS CONCENTRATION: AN OPTION

This option is *above and beyond* the usual international relations subfield choice. It is *not* required.

The international relations concentration was established in 1980 in conjunction with the Department of History. Students choosing this concentration must still satisfy the general requirements for the government major.The core of the international relations concentration includes Government 169, History 238, Economics 108, and a seminar. Students must then, in addition, choose one of the following analytical clusters: world economics or comparative diplomacy, or a self-designed area studies. Students must take an additional three courses in one of these clusters. Students who complete the appropriate courses receive a notation on their final transcript: "Concentration in International Relations."

INTERNSHIPS AND STUDY ABROAD

Internships in American local, state, and federal government agencies, in independent public interest groups, in private law firms and in companies can earn students government major credits. Study abroad may also fulfill major requirements. To receive government credit, a student must work with his or her faculty adviser to ensure that appropriate assignments and supervision are part of these valuable experiences.

HONORS IN GOVERNMENT

Students with very good academic records by the middle of their junior years may apply to the Honors Program in the Government Department. The Honors Program helps to expand research and writing skills through an in-depth systematic analysis of one specific topic. Students can achieve honors by successfully completing the Honors Program, which involves researching, writing, and defending a senior thesis. Interested students should submit their applications to the Honors Program *by March 1 of their junior years.*

NONMAJOR CONCENTRATION

Certain fields of study can be taken as concentrations *in addition to* and complementary to the Government major: women's sstudies, Asian sstudies, Peace Studies, and Jewish Studies. Some of these concentration requirements may *also* fulfill government major requirements. (See specific catalog sections on these concentrations.)

STUDENT HANDBOOK

The Government Department publishes a handbook, which has a more extensive description of major requirements, programs, courses, and faculty, as well as other information relevant to the major. Copies are available in the Government Department Office, Jefferson Academic Center, Room 302.

GENERAL COURSES

102	*First-year Seminar*
107	*Research Methods*
202	*Applications of Game Theory*
203	*Seminar: Political Theorists and Their Theories*
205	*Roots of Political Thought*
206	*Recent Political Theory*
229	*Seminar: Democratic and Social Theory*

248 *Deception and Manipulation in Politics*
299 *Senior Thesis in Government and International Relations*
299.1 *Directed Readings*
299.5 *Special Projects*
299.9 *Internship*

AMERICAN POLITICS AND PUBLIC POLICY
150 *Introduction to American Government*
154 *The Politics of Public Policy in the U.S.*
157 *The Politics of Environmental Issues*
170 *American Political Thought and Behavior*
172 *Suburbia: People and Politics*
175 *Women and Politics*
184 *Politics and Markets*
204 *The American Presidency*
209 *The U.S. Since 1945*
213 *Policy Analysis*
214 *Seminar: Business and Politics*
215 *State Government and Politics*
220 *Urban Politics: People, Power, and Conflict in U.S. Cities*
221 *Seminar: Urban Policy Internship*
223 *Seminar: Suburban Policy Issues*
224 *Black Politics in the United States*
225 *Seminar: History of African-American Women*
251 *American Political Parties and Pressure Groups*
253 *Judicial Politics*
254 *American Constitutional Law*
255 *The Politics of Congress*
269 *Public Policy and Machiavelli Revisited*
281 *Seminar: The Politics of Bureaucracy in the U.S.*
282 *Seminar: Housing Policies*
290 *Seminar: Advanced Topics in American Politics*
291 *Seminar: Lawyers and Politics*
292 *Seminar: Politics Inside Organizations*
294 *Seminar: Campaigns and Elections*

COMPARATIVE POLITICS
103 *Africa and the World*
106 *Introduction to Comparative Politics*
112 *Comparative Authoritarian Systems*
117 *Revolution and Political Violence*
125 *Development Problems*
136 *Sub-Saharan Africa: Issues and Problems*
178 *Politics and History of South Africa*
182 *Politics of France, Germany, and Great Britain*
186 *Upheaval in Eastern Europe*
207 *Seminar: Politics of Development: Central America and Southern Africa*
208 *Comparative Politics of Women*
219 *Seminar: Land and Politics*
228 *Comparative Politics of Race, Ethnicity, and Gender*

232 *Seminar: Social Justice and Development*
235 *Comparative Bureaucratic Politics*
236 *Politics of Vietnam and the Philippines*
242 *Seminar: Politics of Development*
244 *Contemporary African Politics*
256 *Politics of the Soviet Union and Its Successor States*
261 *Seminar: Women and Militarization in a Comparative Politics Perspective*
265 *Politics of Japan*
268 *Europe Post-1992: Political Integration*
286 *Seminar: Advanced Topics in the USSR and Its Successor States*

INTERNATIONAL RELATIONS

103 *Africa and the World*
145 *America and the Changing World Economy*
169 *Introduction to International Relations*
173 *Politics of War and Peace*
179 *Comparative Foreign Policy*
211 *The United Nations*
234 *Seminar: Arms Control*
237 *The Arab State System*
245 *U.S. Foreign Policy–Middle East*
250 *National Security Policy Making in the U.S.*
280 *Soviet Foreign Policy and Its Aftermath*
285 *Seminar: Special Topics in Peace Studies*
287 *The U.S. and the 'New' Europe*
289 *Seminar: Advanced Topics in International Relations*
293 *Seminar: The Politics of Oil*

COURSES

102 SELECTED TOPICS IN GOVERNMENT AND POLITICS/Seminar

This course is designed for a small group of first semester, first-year students. Each year, a different Government professor will teach this seminar on a special topic explored in depth.
Staff/Offered periodically

103 AFRICA AND THE WORLD/Lecture, Discussion

Refer to description under History 060.
Ms. Grier/Offered every other year

106 INTRODUCTION TO COMPARATIVE POLITICS/Lecture, Discussion

This course concentrates on two countries' politics each year: Britain and Mexico one year, and France and Canada in the alternate year. By looking at two countries in depth, the course explores political issues common to all countries, such as the role of the military, the relations between racial and ethnic groups, and how individual citizens become politically active. Open to majors and nonmajors.
Ms. Enloe/Offered every year

107 RESEARCH METHODS/Lecture, Discussion

The focus of this course is the logic of the research process: from developing a research

design (e.g., formulating and stating testable hypotheses and operationalizing concepts) to collecting and analyzing appropriate data (e.g., conducting survey research and using the computer to generate contingency tables and calculate measures of association). The broad concepts that underlie various methods are considered, as are statistical manipulations necessary to employ them. Students design research projects independently or in teams, and analyze data from recent U.S. elections and public opinion polls.
Mr. Blydenburgh, Mr. Cook, Ms. Krefetz/Offered every year

112 COMPARATIVE AUTHORITARIAN SYSTEMS/Lecture, Discussion
One of the most interesting questions of today is why are so many authoritarian regimes suddenly toppling? Has the era of dictators and grand designs passed, or is this a transitional phase leading to new forms of demagoguery and repression? Through a comparative study of several authoritarian regimes, the course seeks to understand the dynamics of modern authoritarianism: its inception and structure, its transitional or permanent nature, and its distinct variations. The course first examines prevalent historical examples (e.g., Hitler's Germany or Franco's Spain), and then selects contemporary case studies from Europe, Latin America, and the Middle East.
Ms. Sochor/Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/Lecture, Discussion
The purpose of the course is to analyze the concept, the causes, and the process of revolution. Why do tensions in some political systems explode into revolutions, while others fizzle out, are suppressed, or are modulated through reform? Is revolution inevitable? How does it differ from terrorism or guerilla warfare or a coup? In order to answer these questions, this course examines theories of revolution as well as specific case studies. The Russian and Chinese revolutions receive particular attention as twentieth-century prototypes; comparisons are then drawn to more recent revolutions in Eastern Europe, the Middle East, and Latin America.
Ms. Sochor/Offered every year

125 DEVELOPMENT PROBLEMS/Lecture, Discussion
Refer to course description under International Development 125.
Ms. Thomas-Slayter/Offered every year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS/Lecture, Discussion
Refer to course description under International Development 136.
Ms. Grier, Ms. Thomas-Slayter/Offered every other year

145 AMERICA AND THE CHANGING WORLD ECONOMY/Lecture, Discussion
This course is designed as an introduction to international political economy or the study of the interaction of wealth, poverty, power, and powerlessness in the global arena. We analyze the role played by the United States in shaping the post-World War II economic order. The historical analysis helps us in understanding contemporary debates about the causes and consequences of America's economic "decline," as well as prospects for the future. Taking Government 169 or 209 (or equivalent) prior to this course is strongly recommended.
Mr. Vitalis/Offered every year

150 INTRODUCTION TO AMERICAN GOVERNMENT/Lecture, Discussion
This course is an introductory study of American political processes and the

performance of the American governmental system. Primarily devoted to an overview of the contemporary structure and operation of national institutions, the course also addresses American political culture, voting and elections, the evolution of federalism, and important public issues, such as civil rights, civil liberties, and economic change.
Mr. Cook, Mr. Miller/ Offered every semester

154 THE POLITICS OF PUBLIC POLICY IN THE U.S./Lecture, Discussion
How do ideas become policies? Who influences decisions about public action? Do the dynamics of policy making vary by issues? This course investigates the politics of policy making at the national level. Different frameworks for understanding policy making are introduced, and the roles of, and interactions among, the principal policy-making institutions are examined. Policy issues examined in depth may include voting rights, affirmative action, social security, and international trade. Beyond lectures and discussions, class meetings include simulations, experiments, and student presentations. Government 150 is strongly recommended as a prerequisite. (Government 154 was formerly Government 109.)
Mr. Cook/Offered every other year

157 THE POLITICS OF ENVIRONMENTAL ISSUES/Lecture, Discussion
Modern environmental problems have significant social, economic, and political roots. This course is intended to provide the student with a basic understanding of these critical dimensions of environmental issues. The course considers the sources of environmental problems, how issues arise, how policies have been formulated, and what effects the policies have had. The general topics covered include the physical nature of environmental problems, the social and political dynamics of environmental problems, and the development of environmental policy in the United States. One or more current environmental problems are examined through readings, guest lectures, and student research.
Mr. Cook/Offered every other year

169 INTRODUCTION TO INTERNATIONAL RELATIONS/Lecture, Discussion
The course is an introduction to basic concepts in the analysis of international relations, e.g., the "balance of power," as well as to the broad alternative perspectives, e.g., "realism" in which these concepts are embedded. We review the use of these perspectives by different analysts in explaining the rise and fall of the "Cold War System," and we begin to assess the dynamics of the "Post-Cold War System" through case studies of such issues as the 1991 Gulf War, the dynamics of the international human rights movement, the Israeli-Palestinian conflict, and the politics of foreign trade. [Note: Students may take History 169 in place of this course for the Government major requirement for introduction to international relations. A student cannot take both History 169 and Government 169 for credit.]
Mr. Vitalis, Mr. Tanaka/Offered every year

170 AMERICAN POLITICAL THOUGHT AND BEHAVIOR/Lecture, Discussion
There are three major foci for this course: (1) some of the most important ideas that have formed a distinctive American political culture–our shared values, beliefs, attitudes, and expectations of government; (2) how this culture is transmitted by society, i.e., the process of political socialization, through which our political orientations and behavioral predispositions are shaped; and (3) contemporary political attitudes and behavior in the United States, especially voting in recent

presidential elections by various groups, such as women, blacks, Jews, and Catholics.
Ms. Krefetz/Offered periodically

172 SUBURBIA: PEOPLE AND POLITICS/Lecture, Discussion
The growth of suburbs in the United States since the end of World War II has had considerable impact on the nature of our metropolitan areas. This course focuses on the following questions: Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a myth or reality? How are suburbs governed? What is suburban political participation like? What are the patterns of policy making in issues such as education, zoning, and property taxes?
Ms. Krefetz/Offered every other year

173 POLITICS OF WAR AND PEACE/Lecture, Discussion
This course is designed to provide students with an opportunity to examine some of the principal actors and policy-making processes concerning issues of war and peace. It focuses on understanding the causes of war, the traditional approaches to preventing or managing war (such as international law or arms control), and the challenges of constructing a more peaceful world political system. The course draws heavily on case studies of wars and acute conflicts, efforts at conflict resolution, and nonviolent social change.
Staff/Offered periodically

175 WOMEN AND POLITICS/Lecture, Discussion
This course explores the political attitudes, behavior, and status of women in the United States. Views on the nature of women and their "proper" role in society and the state, set forth by classical political philosophers in ancient times, are contrasted with ideas introduced by women's rights theorists, beginning in the eighteenth century. The rise of the women's movement in the nineteenth century and the battle for female suffrage are considered as a backdrop for understanding the rebirth of feminism in the 1960s and the struggle over the Equal Rights Amendment. Other major topics deal with contemporary American politics, including: gender differences in political socialization and political participation, the "gender gap" in voting preferences, women as politicians and bureaucrats, and efforts by women to influence public policies.
Ms. Krefetz/Offered every year

178 POLITICS AND HISTORY OF SOUTH AFRICA/Lecture, Discussion
The aim of the course is to acquaint students with the forces that have shaped the political system in South Africa today. The structure of the economy (mining, agriculture, and industry) is examined with particular attention paid to the role of black labor. The rise and consolidation of Afrikaner nationalism, the introduction and implementation of apartheid, the struggle of blacks against apartheid and growing rural and urban poverty, and South Africa's policy toward neighboring African countries are among the topics discussed. The economic and political role played by American investment in South Africa is explored, as is official U.S. policy toward the country.
Ms. Grier/Offered every year

179 COMPARATIVE FOREIGN POLICY/Lecture, Discussion
This course explores the factors that influence the formulation and execution of foreign policy. Attention is accorded to the international setting as well as the domestic

sources of foreign policy making. What makes a country "powerful" in the international arena; how has the nature of power changed since World War II? What are the role of perceptions and misperceptions in a crisis situation? The course explores the process of foreign policy making from the perspective of various countries, including Europe (Western and Central), the Soviet Union and its successor states, and China and Cuba.
Ms. Sochor/Offered every other year

182 POLITICS OF FRANCE, GERMANY, AND GREAT BRITAIN/Lecture, Discussion
A comparative study of the major Western European political systems. Study of the political historic development lays the basis for comparison of modern functions of government. Emphasis is placed on systemic analysis and its importance for comparative politics.
Mr. Rasmussen/Offered every year

184 POLITICS AND MARKETS/Lecture, Discussion
The theory of capitalism becomes an ideology when it is used to explain politics and government. And that is just what is at the core of American political culture: the concepts of market economics permeate our understanding of how government works. But do these concepts work? Are they suitable to explain the workings of a democratic political system? What is the effect of this way of thinking on what Americans value as a nation? This course seeks answers to questions by applying economic tools to American national government and evaluating the results.
Mr. Blydenburgh/Offered every year

186 UPHEAVAL IN EASTERN EUROPE/Lecture, Discussion
Within a dramatic and short space of time, Eastern Europe has been transformed from a homogenized communist bloc to a region brimming with diversity, complexity, and unfulfilled potential. The course seeks to examine Eastern Europe through its various stages of transformation, ranging from Stalinism to pluralism. One of the key questions addressed in the course is: Why did the revolutions of 1989 occur? An additional set of questions automatically surfaces: Which preceding events paved the way for 1989? How did the communist regimes collapse so quickly? Why did the revolutions vary from "velvet" (Czechoslovakia) to "violent" (Romania)? What are the implications for Marxism?
Ms. Sochor/Offered every year

202 APPLICATIONS OF GAME THEORY/Lecture, Discussion
Game theory was invented by John Von Neuman in the 1920s as a language and a logic for analyzing human conflict. It purports to be useful (and your professor believes it is) in systematically identifying the best strategies for resolving many types of conflicts. Emphasis in this course is on understanding and applying the language and the logic. But a substantial amount of the course deals with applications and illustrations, for example, to international relations, nuclear confrontation, political campaigning, and a host of other real-life situations. Emphasis is on "two-person" models with a selective review of "n-person" models. Students learn how to use bargaining, threats, commitments, mediators, ignorance, and power in resolving conflicts.
Mr. Blydenburgh/Offered every other year

203 POLITICAL THEORISTS AND THEIR THEORIES/ Seminar
Each time this course is offered, it focuses on just one or two men or women whose theories have influenced our ideas about power, governing, liberty, equality, or justice. By focusing on only one or two thinkers, we are able to explore in depth their lives and the societies and events that shaped their ideas. Different members of the Government Department take turns offering this course. For example, in 1992-93, Ms. Sochor will concentrate on Karl Marx and the changes wrought in Marxism as a result of the collapse of communist political systems in the USSR and Eastern Europe.
Staff/ Offered every other year

204 THE AMERICAN PRESIDENCY/Lecture, Discussion
This course focuses on the office of the presidency and the various leadership styles of American presidents. We examine the president's changing role in American politics; the evolution of the modern presidency; and the selection and nomination process and presidential character. This course takes a critical look at the office of president and proposes reforms for the future.
Mr. Miller/Offered every other year

205 ROOTS OF POLITICAL THOUGHT/Lecture, Discussion
Western political thought from the classic Greek period to the Renaissance is analyzed through contributions by major thinkers. The Socratic philosophers form the basis. The revolution of Christianity provides the introduction to the Dark and Middles Ages. The Machiavellian era represents pure power politics before Western thought turned to the humanism in the Renaissance.
Mr. Rasmussen/Offered every year

206 RECENT POLITICAL THEORY/Lecture, Discussion
Political theory in its modern, programmatic form is distinguished from the belief structures of ideology. The three dominant trends of socialism, democracy, and conservatism are discussed from an evolutionary and contemporary point of view. Other directions or excesses of the trends are included in the general context of modern social, political, and economic forces.
Mr. Rasmussen/Offered every year

207 POLITICS OF DEVELOPMENT: CENTRAL AMERICA AND SOUTHERN AFRICA/Seminar
The course examines the theoretical debates surrounding concepts such as development, modernization, underdevelopment, and dependency. It looks in detail at the politics of development in two countries: one in Central America and one in Southern Africa. The role of political parties, the bureaucracy, the military, the extremes of wealth and poverty, gender, and the impact of global economic and political forces on these countries are examined.
Ms. Grier/Offered every year

208 COMPARATIVE POLITICS OF WOMEN/Lecture, Discussion
This course explores the roles, priorities, strategies, and theories of women in the politics of industrialized and developing countries. Causes for changes—or lack of genuine changes—in women's political influence are investigated to shed new light on those countries' political systems. The politics of industrialization, revolution, sexuality, labor, cross-race alliances, and the family are discussed. One or more previous

courses in government or in women's studies is strongly advised.
Ms. Enloe/Offered every other year

209 THE U.S. SINCE 1945/Lecture
Refer to course description under History 209.
Mr. Little/Offered every other year

211 THE UNITED NATIONS/Lecture, Discussion
The core component of this course is participation in the Harvard National United Nations Conference and National Model U.N. Conferences. The members of the class represent Clark University at the conference by acting as delegates from nation-states. Issues ranging from disarmament to human rights to current political crises are researched. Students prepare resolutions and speeches and learn the rules of procedure operative at the United Nations. Oral reports and a written paper also are required. Open to all qualified students, though class size is limited and permission of the instructor is required.
Mr. Vitalis/Offered every year

213 POLICY ANALYSIS/Lecture, Discussion
Which public policy proposals will work and which will fail? What costs and benefits will a program generate? What impact will a policy have? Policy analysis draws on political science, economics, and other social sciences to answer questions like these for public officials who must decide what to do about the increasingly complex problems facing modern society. By examining policies regarding the environment, the economy, public health and welfare, and other areas, the course provides students with the ability to understand critical public problems and potential solutions in multidimensional ways. The major assignment is participation in a class project analyzing a current policy problem. Limited to juniors and seniors.
Mr. Cook/Offered every other year

214 BUSINESS AND POLITICS/Seminar
The focus of this course is the tension between private economic forces and public political power. The theoretical aspects are explored through a series of readings of major writers in this area. The practical aspects are dealt with through the use of community resources. This course permits individualized reports in specific areas of interest. Enrollment is limited to twenty students.
Mr. Rasmussen/ Offered every other year

215 STATE GOVERNMENT AND POLITICS/Lecture, Discussion
This is an overview of the operation of state governments, explaining the distinctive features of states in terms of their individual political, economic, historical, legal, and demographic characteristics. The focus is on how these features explain state political systems in the present and how they are likely to shape the states of the future. Special attention is given to Massachusetts and other Northeastern states. Prerequisite: Government 150.
Mr. Blydenburgh/Offered every other year

219 LAND AND POLITICS/Seminar
This seminar explores the role that land plays in the politics of developing countries. Using selected countries from Africa, Asia, Latin America, and the Caribbean, the course examines the historical and contemporary development of land ownership and

the relationship between these developments and issues of wealth, poverty, political repression, underdevelopment, and external dependence. Questions raised include: Who owns land? How did they get it? How do they use it? Is there a landless class? What is their relationship to those who own the land? What role does the state play in land ownership and land-use patterns? What role do foreign powers (governments, agro-business) play in these internal arrangements? Is "land reform" the answer?
Ms. Grier/Offered every year

220 URBAN POLITICS: PEOPLE, POWER, AND CONFLICT IN U.S. CITIES/ Lecture, Discussion

The primary focus is on the various socioeconomic and political forces that affect city politics in the U.S. Topics discussed include: the social, economic, and political nature of the city; fiscal constraints; federal and state urban policies; political machines; reforms; the "Post-Reform Era"; the community power debate; mayoral power and styles; regimes and coalition building; and efforts by blacks and Hispanics to gain political incorporation.
Ms. Krefetz/Offered every year

221 URBAN POLICY/Seminar and Internship

This course picks up where the general *Urban Politics* course leaves off and concentrates on a wide range of factors that shape how cities make and implement policies and deliver services. The main, substantive focus is on downtown redevelopment, neighborhood revitalization, and housing policies. To gain a fuller understanding of the complex bureaucratic, political, and idiosyncratic variables that affect urban policies, each student does an internship supervised by an individual actively involved in policy making or implementation in Worcester, e.g., an agency or organization working on redevelopment and/or housing issues. In a portion of the seminar sessions, students share with each other their experiences working in the field, thus combining the perspectives of scholars and practitioners. Government 220 or permission of the instructor is required. The course is limited to twelve students, with preference given to juniors and seniors. Prerequisite: Government 220 or permission of instructor.
Ms. Krefetz/ Offered every other year

223 SUBURBAN POLICY ISSUES/Seminar

This course picks up where the introductory suburban politics course leaves off and explores politics and policy making on several major issues in suburban communities, especially zoning and land use, education, and property taxes. Students conduct original research on these issues in Worcester and the Boston suburbs. Prerequisite: Government 172 or permission of instructor.
Ms. Krefetz/Offered periodically

224 BLACK POLITICS IN THE UNITED STATES/Lecture, Discussion

This course examines the evolution of the relationship between African-Americans and the U.S. political system. Beginning with the civil rights era of mass mobilization, mass enfranchisement, and mass participation of African-Americans and ending with the current era of conservatism and the "new racism," the course explores how the legislative, judicial, and executive branches of government, the major political parties, and the mass media have responded to African-American demands for equality and justice. It also looks at the impact of the Congressional Black Caucus, big city mayors, independent African-American political parties and leaders, and the debates between

African-American conservatives, liberals, and radicals.
Ms. Grier/Offered every other year

225 HISTORY OF AFRICAN-AMERICAN WOMEN/Seminar
Refer to course description under History 224.
Ms. Grier/Offered every other year

228 COMPARATIVE POLITICS OF RACE, ETHNICITY, AND GENDER/Lecture, Discussion
In this course, we explore the politics of "ethnicity" and "race" for groups as different as Asian-Americans, black Britons, South African Afrikaners, Latin American Indians, French Canadians, and others in the politics of both industrialized and Third World countries. The political interactions of ideas about "masculinity" and "femininity" with race, ethnicity, and state power are featured. Some previous study of international development, comparative politics, history, sociology, or women's studies would be very useful.
Ms. Enloe/Offered every other year

229 DEMOCRATIC AND SOCIAL THEORY/ Seminar
"Democracy is the worst possible form of government, but the only one acceptable until a better one is found." Twentieth-century critics of democracy are numerous, but so are its defenders. The concept's development, viability, and vitality are analyzed in this seminar, as are its different forms, including liberal democracy, popular democracy, people's democracy, and social democracy. The patterns the forms follow and the alternatives to democracy they produce are discussed. The focus of the seminar is on political theory; a prior knowledge of practical politics and ideology traditionally identified as "ism" is helpful.
Mr. Rasmussen/Offered every year

232 SOCIAL JUSTICE AND DEVELOPMENT/Seminar
Refer to course description under I.D. 232.
Mr. Nawawi/Offered periodically

234 ARMS CONTROL/Seminar
Examines the key issues and current state of play in the major arms control negotiations involving the U.S. and the former part of the U.S.S.R., including discussion of such specific topics as verification, nuclear terrorism, command and control, and nuclear weapons testing.
Mr. Lane/Offered every other year

235 COMPARATIVE BUREAUCRATIC POLITICS/Lecture, Discussion
In both industrial and Third World nations, bureaucrats and their agencies have shaped political life. They are not "faceless"; they have hopes, fears, strategies, and alliances. This course uses cases from Europe, Africa, and Asia to explore when bureaucrats are strong and when they are weak, and why it matters today to both ordinary citizens and elites. We look at politics from the point of view of people inside government agencies and also from the point of view of men and women of different ethnic groups, whose lives are affected by those officials.
Ms. Enloe/Offered periodically

236 POLITICS OF VIETNAM AND THE PHILIPPINES/Lecture, Discussion
We analyze changes, and resistance to change, that have occurred in these two countries. Peasant politics, elite politics, nationalism, foreign investment, the military, ethnic politics, and women's politics are explored. We investigate what this suggests about the entire region of Southeast Asia today.
Ms. Enloe/Offered every other year

237 THE ARAB STATE SYSTEM/Lecture, Discussion
This course focuses on the politics of "state building"–defining and institutionalizing the boundaries of the "nation-state"–in the post-World War I Middle East as a way of understanding the interaction of "international" and "domestic" factors in the historical evolution of "foreign" security and economic policy in Egypt, Syria, Iraq, Jordan, Lebanon, Saudi Arabia, and the Palestinian "state-in-formation." Prerequisites: Gov. 106, 169 or 179.
Mr. Vitalis/Offered every other year

242 POLITICS OF DEVELOPMENT/Seminar
Refer to course description under International Development 242.
Mr. Nawawi/Offered periodically

244 CONTEMPORARY AFRICAN POLITICS/Lecture, Discussion
Refer to course description under International Development 244.
Mr. Adam/Offered periodically

245 U.S. FOREIGN POLICY-MIDDLE EAST/Lecture, Discussion
This course provides an overview of U.S. foreign policy and diplomacy toward Israel and Arab countries since World War II. The first sessions review the factors that affect the formation and implementation of U.S. foreign policy in the Middle East. The remaining sessions deal with the events of the last forty years in this region, and how they have affected and been affected by U.S. policy.
Mr. Lane/Offered periodically

248 DECEPTION AND MANIPULATION IN POLITICS/Lecture, Discussion
Twentieth-century Western societies have been strongly affected by the expansion of human consciousness through self-knowledge and technological change. However, simultaneous with the benefits of psychological development is the apparent rise of mass character disorders which are destructive of the essential values of Western culture. This seminar explores the psychological and historical roots of both changes, and their implications for democratic government and contemporary political movements. Open to juniors and seniors only.
Mr. Blydenburgh/Offered every year

250 NATIONAL SECURITY POLICY MAKING IN THE U.S./Lecture, Discussion
This course explores the domestic and international politics of American national security policy, with a specific focus on the evolution and implementation of counterinsurgency and related strategies of intervention (military assistance, covert action, low-intensity conflict, etc.) in the "Third World." We examine the historical background and the principal policy-making institutions involved in security policy. Case studies focus on the Vietnam War, El Salvador, and the Arab-Persian Gulf.

Prerequisites: Gov. 150 and 169 or equivalent.
Mr. Vitalis/Offered every other year

251 AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS/Lecture, Discussion

This course explains the primary importance of interest groups and political parties in the American political system. Special emphasis is placed on theories of interest groups: why people join them, and why certain political groups fail to organize and make demands on government structures.
Staff/Offered periodically

253 JUDICIAL POLITICS/Lecture, Discussion

This course explores the relationships between the courts and other sectors of the American political system. Among the topics studied are how judges are selected, how courts handle civil and criminal cases, judicial policy making, and how interest groups use the courts.
Mr. Miller/Offered every other year

254 AMERICAN CONSTITUTIONAL LAW/Lecture, Discussion

This course focuses on the historic and contemporary role of the U.S. Supreme Court in interpreting the Constitution. Topics include the nature of federalism, powers of governmental institutions, freedom of speech and religion, equal rights, rights of the accused, and the issues of prayer and abortion.
Mr. Miller/Offered every other year

255 THE POLITICS OF CONGRESS/Lecture, Discussion

An in-depth examination of the contemporary politics of the U.S. Congress from both an individual and institutional perspective. Major topics include Congressional elections, differing views of representation, House-Senate differences, Congressional policy making, relationships between Congress and the courts, the presidency, the bureaucracy and interest groups, and the future of the institution.
Mr. Miller/Offered every other year

256 POLITICS OF THE SOVIET UNION AND ITS SUCCESSOR STATES/Lecture, Discussion

This course examines key factors in the formation and evolution of the Soviet and post-Soviet political systems. The course reviews critical junctures in Soviet political history, from Lenin to Gorbachev and beyond. A major focus–and major puzzle–is the Gorbachev period. Why did Gorbachev introduce radical reforms? Why did these reforms hasten the demise of the U.S.S.R. rather than revitalize the economy, the society, and the multi-national union, as expected? Will Gorbachev's successors and the newly independent successor states prove to be more successful in their transition to market economies and democratic political systems?
Ms. Sochor/Offered every year

261 WOMEN AND MILITARIZATION IN A COMPARATIVE POLITICS PERSPECTIVE/Seminar

We examine the analytical proposition that the process by which any country's military grows in influence is shaped by its ideas about "masculinity" and "femininity." We explore questions such as: What do women's own experiences in wartime and peacetime reveal about military politics? What do we expose about militaries when

we look behind governments' policies to use women as mothers, wives, workers, or prostitutes? Do racial and economic differences shape a military's sexual division of labor? Countries such as Britain, Chile, the Philippines, and the United States are discussed. Previous government or women's studies courses are desirable. Limited to juniors, seniors, and graduate students.
Ms. Enloe/Offered every other year

265 POLITICS OF JAPAN/Lecture, Discussion

Japan is considered one of the world's powers. Yet its domestic political dynamics are not widely understood by Americans. This course explores the major factors that have shaped Japanese politics and government policies since 1945. Among the topics to be analyzed are: factional rivalries within major parties; the influence of bureaucrats; and the role of women, minorities, and business in politics. The course is open to majors and nonmajors.
Ms. Enloe/Offered every other year

268 EUROPE POST-1992: POLITICAL INTEGRATION/Lecture, Discussion

Western Europe is moving toward greater unity from traditional intergovernmental through a period of innovative supra-national to a rudimentary form for a multinational state. The process raises conflicts between national vs. European politics. This conflict expressed as an endo- versus an exo-national division has provided new perspectives on mutual problems and has duplicated national legislative, executive, and judicial institutions at the European level. The process will change our understanding of such concepts as sovereignty and the national-state as Europe transforms a system not yet dead, while reaching for one still to be born.
Mr. Rasmussen/Offered every year

269 PUBLIC POLICY AND MACHIAVELLI REVISITED/Lecture, Discussion

This course offers an in-depth analysis of Machiavelli's political theory and approach to policy making. The course differentiates between normative theory and objective analysis. In the process, themes developed by Machiavelli are applied to current policy formation and models for public-policy analysis.
Mr. Rasmussen/Offered every other year

280 SOVIET FOREIGN POLICY AND ITS AFTERMATH/Lecture, Discussion

This course provides an overview of Soviet foreign policy from the country's uncertain beginnings as the first Marxist state to its dominant position as a superpower to its recent dissolution and collapse. The course considers the problems and goals of the successive phases of Soviet foreign policy. Emphasis is given to the "new thinking" in Soviet foreign policy introduced by Gorbachev, its policy implementation, and its repercussions. The course also examines the efforts of the successor states, especially Russia and the Ukraine, to devise viable foreign policy strategies in the aftermath of the disintegration of the U.S.S.R.
Ms. Sochor/Offered every other year

281 THE POLITICS OF BUREAUCRACY IN THE U.S./Seminar

Administrative agencies wield considerable power and policy-making authority in American politics. What distinguishes one agency from another? How do bureaucratic agencies derive their power? How do Congress and the president attempt to control the bureaucracy? What kind of politics prevails inside bureaucratic agencies? Case studies of such agencies as the C.I.A. and student research provide the vehicles for

exploring these questions in depth. Government 150 strongly recommended.
Mr. Cook/Offered every other year

282 HOUSING POLICIES/Seminar

This course focuses on the social, economic, and political factors that shape the federal government's housing policies and the implementation of housing programs by local governments in metropolitan areas of the United States. Among the major topics explored are: the myths and realities of public housing; urban renewal; gentrification; linkage; responses to homelessness; rent control; condominium conversions; and redlining, exclusionary zoning, and other forms of racial, gender, and income discrimination in housing.
Ms. Krefetz/Offered every other year

285 SPECIAL TOPICS IN PEACE STUDIES/Seminar

Refer to course description under Peace Studies 285.
Staff/Offered periodically

286 ADVANCED TOPICS: U.S.S.R. AND ITS SUCCESSOR STATES/Seminar

The course explores in greater depth some of the challenges and problems facing the post-Soviet leaders. Topics vary according to the changing political scene and may include any of the following: anatomy of the 1991 coup, transition to market economies and integration into the world market, emergence of civil societies and democratization, rise of ethnic and national consciousness, cooperation and conflict among successor states, demilitarization and control over nuclear weapons, the uncertain status of the Commonwealth.
Ms. Sochor/Offered every year

287 THE U.S. AND THE 'NEW' EUROPE/Seminar

This course first reviews the evolution of U.S.-European relations since the end of World War II, including U.S. relations with the U.S.S.R. in this European context. After a brief discussion of the Revolution of 1989, and the collapse of the U.S.S.R. in 1991, the course assesses the future of the Atlantic partnership and overall U.S.- European political, economic, and military/security relations.
Mr. Lane/Offered every year

289 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/Seminar

The course is organized as a research seminar, focusing on historical-based approaches to, and problems in, U.S. foreign policy. The topic of the seminar varies from year to year. Substantial (twenty- to thirty-page) research paper required. Generally restricted to junior and senior I.R. majors; others may be admitted with permission of the instructor.
Mr. Vitalis/Offered every year

290 ADVANCED TOPICS IN AMERICAN POLITICS/Seminar

This is a course for juniors and seniors on specialized topics in American politics. The focus is different each year it is offered, and the course is taught by government faculty in fields of their particular interest. For example, in 1992-93, the seminar focuses on the politics of Puerto Rico. Other topics in future years will include the media in U.S. politics.
Staff/Offered periodically

291 LAWYERS AND POLITICS/Seminar

This course examines the role played by lawyers in various aspects of American politics. Topics include lawyers in private practice, lawyers in legislatures, lawyers as judges, lawyers as lobbyists, government agency lawyers, and academic lawyers.
Mr. Miller/Offered every other year

292 POLITICS INSIDE ORGANIZATIONS/Seminar

The core argument on which this course is based is that organizations, especially bureaucratic ones, are best understood as political entities. The principal issues concern how executives and managers design the control systems of bureaucracies to manipulate the behavior of subordinates, and how subordinates are able to resist such attempts at control. The principal schools of thought on organizational behavior, including scientific management, human relations, and neo-Weberian approaches are considered for their contributions to a political interpretation of organizational behavior. Case studies and student research provide the material for class discussions.
Mr. Cook/Offered every other year

293 THE POLITICS OF OIL/Seminar

This course focuses on the history and contemporary dynamics of the global oil industry, the changing boundaries between private and public interest in this economic sector, and access to oil as a specific foreign policy problem for industrialized and industrializing countries. Prerequisite: Gov. 145 or equivalent.
Mr. Vitalis/Offered every other year

294 CAMPAIGNS AND ELECTIONS/Seminar

Nowhere is the political impact of the new technologies of communication and information processing more powerful than in the electoral system. A corps of professional campaign managers has emerged—women and men whose expertise has changed the meaning of elections in American politics. This seminar seeks to develop an understanding of this new and volatile source of political power through readings, research, and illustration.
Mr. Blydenburgh/Offered every other year

Hebrew

See Department of Foreign Languages and Literatures.

History

DEPARTMENT FACULTY

Paul S. Ropp, Ph.D., *chair:* Chinese, social, and intellectual history

Daniel R. Borg, Ph.D.: modern German history, modern European history, totalitarianism

Sarah J. Deutsch, Ph.D.: American social history, American women

Richard B. Ford, Ph.D.: African history, international development

Janette Greenwood, Ph.D.: American social and African-American history, and history of the South

Douglas J. Little, Ph.D.: U.S. diplomatic history, U.S. twentieth-century history

Paul Lucas, Ph.D.: England and France before 1800; European intellectual history, 1650-1945

Drew R. McCoy, Ph.D.: early American history, U.S. intellectual and political history

Ronald K. Richardson, Ph.D.: European cultural history, British history and British Empire

Stefan Tanaka, Ph.D.: Japanese history, intercultural relations

AFFILIATE AND ADJUNCT FACULTY

Edward Abrahams, Ph.D.
Michiko Y. Aoki, Ph.D.
Thomas C. Barrow, Ph.D.
John C. Brown, Ph.D.
Paul Burke Jr., Ph.D.
Everett Fox, Ph.D.
Beverly C. Grier, Ph.D.
William A. Koelsch, Ph.D.
George M. Lane, M.A.
Marcus A. McCorison, M.S.
Thomas P. Massey, Ph.D.
Zenovia A. Sochor, Ph.D.
Shelly Tenenbaum, Ph.D.
Richard P. Traina, Ph.D.
Robert J. Vitalis, Ph.D.

EMERITI

George A. Billias, Ph.D.
Robert F. Campbell, Ph.D.
Theodore H. Von Laue, Ph.D.

UNDERGRADUATE PROGRAM

The History Department offers a traditional major and a wide variety of elective courses for nonmajors. Within the history major students may specialize in one geographical area such as America, Europe, or Asia; they may choose as their specialty one of the University's interdisciplinary concentrations such as Asian studies, international relations, Jewish studies, or women's studies; or they may specialize in a particular period or in a type of history. Examples of the latter include such areas as twentieth-century global history, comparative social history, the history of ideas, and the history of cultures.

The history major offers a broad liberal education with exposure to a variety of fields of knowledge. It offers vigorous training in critical thinking; in the accumulation, organization, and analysis of information; and in clear and concise writing. In addition to preparation for graduate school and a teaching career in history, the history major provides an excellent background for careers in law; government; journalism; international affairs; museum, library, and archival work; and even business. With courses on every major geographical area of the world, and with conceptual approaches ranging from political and diplomatic to social, intellectual, and cultural, the History Department offers a very wide range of study.

UNDERGRADUATE MAJOR

The Major Requirements

The student majoring in history must take ten history courses and four nonhistory courses, carefully chosen in consultation with his or her advisor to form a coherent program of study that reflects depth as well as breadth. To assure that the student explores one area of history in some depth, five of the ten required history courses must be in a field of specialization. While a field of specialization usually is defined as one geographical area (e.g., U.S., Europe, or Asia), in special cases a student and his or her advisor may define a specialization chronologically or topically (e.g., twentieth-century global history, comparative social history, the history of ideas). In addition to expertise in one area, the history major is also expected to require some breadth of knowledge by taking at least two history courses in two regions of the world different from the student's area of specialization.

The history requirements may be summarized as ten courses in history and four related courses outside of history.

The ten courses in history should meet the following conditions:

1. At least five courses must be taken in an area of specialization (defined geographically, topically, or chronologically). Of these five, at least three must be at the 200 level, and at least one must be a pro-seminar, seminar, or directed research.
2. In addition at least two other history courses must be taken at the 200 level, preferably outside the specialization.
3. At least two courses must be taken in two geographical regions different from the student's area of specialization. (For example, a student specializing in U.S. history may meet this requirement by taking two courses in two of the following areas: Africa, Asia, Europe, Latin America, or global.)
4. At least one course, whether inside or outside the specialization, must be devoted primarily to a period before the nineteenth century.
5. One capstone course must be taken in the senior year, either the departmental capstone course or **(with permission of the chair and the instructor)** a research seminar or directed research course in the student's area of specialization. The capstone requirement cannot be met by any course used to meet conditions 1 through 4.

The student also must complete four nonhistory courses related to the student's main area of interest. These courses can be at any level and need not all be in the same department, but they should be chosen carefully in consultation with the student's advisor, to assure that they are clearly related to the student's area of concentration or specialization. For example, a student interested in American or European intellectual history would be expected to find relevant courses in the history of art, science, literature, and/or philosophy. A student specializing in social history might take related courses in such social science disciplines as sociology, government, psychology, and geography. For a student specializing in European or in an Asian history concentration, courses in relevant languages and cultures would also count toward the fulfillment of this four-course requirement.

Every history major is required to select an academic advisor from among the history faculty, and to consult regularly with his or her advisor, especially before choosing courses and registering each semester. Working closely together, the student and advisor can design a coherent sequence of courses moving from introductory to more advanced courses, design an area of specialization closely related to the student's main interests and career goals, and choose nonhistory courses that will enhance the student's area of concentration. They also can make timely decisions regarding advanced research courses and possible enrollment in the departmental honors program.

For information concerning predesigned structured concentrations (Asian studies, international development, international relations, Jewish studies, peace studies, and women's studies) see relevant sections in this catalog.

THE HONORS PROGRAM

The honors program in history is designed to provide a challenging set of advanced courses for outstanding history majors. The program is valuable not only for would-be professional historians, but also for anyone who intends to pursue a career that requires resourcefulness and excellent analytical and writing skills.

To complete the honors program successfully, the student must meet the general requirements for the major, choose a field of specialization, and earn four honors credits as part of, or in some cases in addition to, the nine required history courses. More specifically, a student enters the program by taking a prehonors seminar or proseminar (see below). Formal admission into the honors program is contingent upon the successful completion of a prehonors seminar and upon evidence of outstanding work in other history courses. Then, building on work in the prehonors course, the student writes an extensive research thesis (two course credits) under the supervision of his or her advisor. Finally, in the spring semester of the senior year, students undertake a directed readings course (one course credit) in the general field of their thesis topic. The program culminates with a written examination in the field of specialization and an oral defense of the student's thesis. The written examination and the oral defense will be conducted by the honors committee, which will include the student's thesis advisor and two other members of the department. If the committee judges the work to merit the distinction of honors, the student's transcript will state that he or she majored in history with honors, with high honors, or with highest honors. If the committee finds the thesis or examination unsatisfactory for honors credit, the student receives ordinary history credit for the thesis and directed readings course; the student's transcript will state simply that he or she majored in history.

THE PREHONORS SEMINAR OR PROSEMINAR

To enroll initially in the honors program, students take one of the history seminars or proseminars designated as available for honors credit. These are courses designed to develop research, analytical, and writing skills. The major part of these courses is devoted to the writing and revising of research papers. It is expected that each full-time history faculty member will regularly offer at least one prehonors seminar or proseminar. Typically these would include courses such as History 291, *Advanced Topics in International Relations.* For a more complete listing of prehonors seminars and proseminars, consult Professor Ropp, the department chair, or Professor Little, the director of the honors program.

TEACHER CERTIFICATION

Students may receive certification to teach history at the high school level in Massachusetts (and perhaps other states). Interested students should speak to the History Department chair.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select non-Western historical themes as supporting fields. Emphasis is placed on American history because of the department's affiliation with the American Antiquarian Society. The Antiquarian Society provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history prior to 1876. A dozen smaller libraries in Worcester, with combined holdings of more than one million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence, and New Haven-area research facilities.

The department offers graduate work in the form of reading seminars (colloquia), research seminars, and individual tutorials for both reading and research purposes. First- and second-year students take three courses each semester; one of these courses must be expressly devoted to research for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper division undergraduate courses. The director of the graduate program assigns incoming graduate students to faculty advisors, who help design student programs. With the permission of the advisor, a student is encouraged to take suitable courses in other departments or colleges in the Worcester Consortium.

MASTER OF ARTS

The department enrolls master's candidates and awards the degree to students who have completed six courses and a one-year residence requirement; who have either submitted two substantial research papers prepared in two seminars, which are jointly equivalent to the master's thesis, or submitted a master's thesis; and who have passed the required oral examination. (The department now admits part-time M.A. students, whose residency requirement is defined in terms of courses taken.)

Ph.D. candidates who have passed their preliminary examination (whether or not they will continue with a dissertation) may also receive the degree of master of arts.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading, and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an M.A. degree ordinarily must spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination, and write a doctoral dissertation within seven years of matriculation. (In recent years the department also has admitted part-time Ph.D. students; their residency is defined in terms of courses taken.)

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language, normally French, German, Spanish, or Russian. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The department chair designates an examiner in each language, who determines if the student is proficient enough to use the language as a research tool. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

First-year Exam: At the end of the first year there will be a one-hour oral exam based on the first year's course work. The first-year exam will be required for all first-year graduate students, whether they come with or without an M.A.

Teaching Experience: Some teaching experience at the college level is desirable for the Ph.D. degree. Students normally meet this requirement in their second and third years as teaching assistants.

Fields: Soon after arriving at Clark, each student, in cooperation with his/her advisor, selects three fields and prepares for them in whatever ways seem appropriate in view of her/his background and interests. Students specializing in American history normally cover the full scope of American history as one field. Those concentrating in non-American history normally offer one American field. Any student may include a nonhistorical subject as a field, usually within the social sciences, or prepare an interdisciplinary field.

Preliminary Examination: Before the end of the third year, students will take an oral examination covering their three fields. For more details concerning the three-field oral exam, consult the *History Department Graduate Program Handbook*. The combined three-field oral examination constitutes the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examination may, upon request, receive the master of arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation advisor as soon as possible. The process of writing a dissertation is outlined in a brochure, *Format Regulations for Theses, Dissertations, and Research Papers at Clark University*, which may be obtained from the thesis format advisor in the Graduate School Office.

COURSES

NOTE: Undergraduate courses are of two types: (1) survey courses designed for freshmen and sophomores, numbered with two digits or 100-199, and (2) advanced courses numbered 200-299. The latter carry no prerequisites (unless specifically noted) but generally carry a heavier workload than lower level courses. Some 300-level graduate courses are open to juniors and seniors with permission of the instructor. In case of doubt, students should consult their instructors. The term *proseminar* indicates courses of limited enrollment that combine reading, discussion, and written reports. The term *seminar* indicates a research course.

HISTORY DEPARTMENT COURSE LISTING BY FIELDS OF SPECIALIZATION

U.S. HISTORY

010	*Introduction to History*
011	*Survey of U.S. History to 1865*
012	*Survey of U.S. History since 1865*
016	*Race and Ethnicity in American History*

020	*America and the World*
145	*U.S. History through the Novel*
200	*America's Formative Years*
201	*Era of the American Revolution*
202	*The Early American Republic*
203	*Seminar in U.S. Urban History: Colonial–Modern Period*
204	*Interpretations of American History*
205	*History of the American West*
208	*The U.S., 1900-1945*
209	*The U.S. since 1945*
210	*Research Seminar in Early American History*
211	*Native American History through Autobiography*
212	*U.S. Urban History*
213	*Gender and the City in the U.S.*
214	*The American Civil War*
215	*The Age of Lincoln*
216	*American History in Comparative Perspective*
218	*U.S. in the 1920s and 1930s*
219	*History of American Women*
220	*Worcester Historical Museum/Public History/Research Seminar*
221	*African-American History*
222	*History of the South*
223	*The Civil Rights Movement*
224	*History of African-American Women*
227.1	*American Thought and Culture, 1740-1865*
227.2	*American Thought and Culture since 1865*
231	*America in the Gilded Age*
232	*American Victorian Culture*
234	*Health and Disease in the American Habitat*
237	*Topics in U.S. Labor History*
238	*U.S. Foreign Relations since 1914*
239	*American Constitutional Law*
243	*American Antiquarian Society Seminar in American Studies*
245	*U.S. Foreign Policy: Middle East*
246	*The History of American Higher Education*
249.1	*Topics in American Social History*
249.2	*Research Seminar in American Social History*
291	*Advanced Topics in International Relations*

EUROPEAN HISTORY

005	*Romans and Barbarians*
030	*Europe and Its Future*
070	*Our European Roots: Western Civilization from the "Fall" of Rome through the Renaissance and Reformation*
071	*Our European Roots: Western Civilization from the Seventeenth Century to the Present*
074	*The World and the West*
105	*Greeks and Barbarians in the Ancient Ecumene*

110	*Imperial Europe*
124	*Ethnicity and Nationalism in Modern Europe in Comparative Perspective*
157	*The Age of Nero*
158	*Modern English History*
161	*British India*
163	*Russia to 1917*
168	*The History of Capitalism*
229	*Classical Traditions and Modern Thought*
250	*The Formation of the Modern State: Group Consciousness, Individualism, and Social Organization in "Old Europe," 1550-1789*
251	*The Comparative Study of Revolutions: The French Revolution of 1789 and the Beginnings of Modern Revolutions*
252	*Nineteenth-century Europe*
253	*Twentieth-century Europe*
254	*Empire and Race in British History*
256	*Politics of the Soviet Union and Its Successor States*
257	*Europe since 1945*
258	*England's Old Regime*
259	*Modern Germany*
263	*Africans and Asians in European History*
271	*In Search of Humanity: Eighteenth-century European Values*
272	*In Search of Humanity: Nineteenth-century European Values*
273	*Modern European Culture*
280	*Soviet Foreign Policy and Its Aftermath*
293	*History and Personality*
294	*Twentieth-century Western Culture*

JEWISH HISTORY

117	*Introduction to Hebrew Bible: Narrative and Law*
174	*The Jewish Experience*
262	*Jews and Christians in the Ancient World*
276	*Modern Jewish History and Thought*
278	*The Holocaust: A Study of Genocide*

LATIN AMERICAN HISTORY

127	*Introduction to Latin America*
177	*Latin America since 1825*

AFRICAN HISTORY

060	*Africa and the World*
178	*Politics and History of South Africa*
179	*The History of Traditional Africa*
180	*History of Modern Africa*

ASIAN HISTORY

031	*Great Books of China*
080	*Introduction to Modern Asia*
084	*Japanese Civilization*

161	*British India*
181	*Traditional China*
182	*Modern China*
184	*Modern Japan*
280.1	*Seminar in Chinese History*
280.4	*Seminar in Japanese History*
281	*The Peoples Republic of China*
282	*Chinese Women in Literature and Society*
283	*Japanese Culture and Economic Development*
284.1	*Japan since World War II*
285	*Japanese Folklore*
288	*The Atomic Bomb*
289	*Japanese Thought*

INTERNATIONAL DEVELOPMENT

035	*Villages of the Third World*
047	*Food, Population, and Environment*
125	*Development Problems*
127	*Introduction to Latin America*
290	*Development Project Management*

INTERNATIONAL RELATIONS

169	*Introduction to International Relations*
228	*Uses of the Past in History*
233	*Seminar on Arms Control*
245	*U.S. Foreign Policy: Middle East*
266	*Historical Identities*
268	*Foreigners Perceived: Intercultural Relations through Travel Writings*
284	*Cultural Identity and the Nation State*
288	*The Atomic Bomb*
291	*Advanced Topics in International Relations*
296	*Modes of Interpretation*

GENERAL GLOBAL HISTORY

090	*Survey of the Twentieth-century Global History*
162	*The History of the Modern Middle East*
168	*The History of Capitalism*
228	*Uses of the Past in History*
255	*Global Relations: Twentieth Century*
260	*Nationalism and Global Interdependence*
293	*History and Personality*

HISTORY COURSES (In Numerical Order)

005 ROMANS AND BARBARIANS/Lecture, Discussion

Refer to course description under Classics 005.
Mr. Burke/Offered every other year

010 INTRODUCTION TO HISTORY/Lecture, Discussion

Introduces basic problems of historical method and interdisciplinary study as revealed in American history. The nature of history, and the individual student's connection

with American social history, are examined through autobiography, family history, historic fiction, and ethnicity. Emphasis is placed on reading, discussion, and writing one's own family history. Fulfills the *historical perspective* requirement.
Mr. Ford/Offered every year

011 SURVEY OF U.S. HISTORY TO 1865/Lecture, Discussion
A survey of American history from the earliest seventeenth-century settlements through the end of the Civil War. The course is broadly thematic and seeks both to introduce students to the nature of historical inquiry and to stimulate creative inquiry into the origins and character of American civilization. Fulfills the *historical perspective* requirement.
Mr. McCoy/Offered every year

012 SURVEY OF U.S. HISTORY SINCE 1865/Lecture, Discussion
This course chronicles the rise of America to world power by focusing on key internal as well as foreign policy developments and conflict. The private as well as the public side of life and the diversity of Americans' experiences are highlighted. Attention is given to general political, social, economic, and intellectual developments. Fulfills the *historical perspective* requirement.
Ms. Deutsch, Ms. Greenwood/Offered every year

016 RACE AND ETHNICITY IN AMERICAN HISTORY/Lecture, Discussion
Explores the influence that racial and ethnic patterns have had upon the whole course of American history. In terms of race, it analyzes the impact that red, white, and black peoples have had upon American history from colonial times to the 1980s. Fulfills the *historical perspective* requirement.
Ms. Greenwood/Offered every year

020 AMERICA AND THE WORLD/Lecture, Discussion
This course is designed to place American history from roughly 1500 to the 1990s in a global context. The approach can most accurately be labelled comparative, as distinct from the domestic and diplomatic frameworks usually adopted in more traditional surveys of the American past. Major topics include changing patterns in race relations, the impact of America's revolutionary political tradition on the world, and the role of American business and culture in shaping the New World order of the 1990s. Fulfills the *historical perspective* requirement.
Mr. Little/Offered every year

035 VILLAGES OF THE THIRD WORLD
This course explores the nature of village life in Asia, Africa, and Latin America. Readings are both anthropological and historical with several novels used to enliven the readings and class discussions. Fulfills the *verbal expression* requirement.
Mr. Ford/Offered periodically

047 FOOD, POPULATION, AND ENVIRONMENT
Refer to course description under ID 147.
Mr. Ford/Offered periodically

060 AFRICA AND THE WORLD/Lecture, Discussion
The course examines the historical and contemporary relationships between Africa and the rest of the world, emphasizing the two-way nature of the relationship: Africa's

influence on world history and events and the influence of the world on Africa. Specifically, the course looks at: relationships between Africa and Europe, the U.S., the socialized world, the Muslim world, and the Middle East, and ends with a special focus on South Africa and the world. Fulfills the *historical perspective* requirement.
Ms. Grier/Offered every other year

070 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE "FALL" OF ROME THROUGH THE RENAISSANCE AND REFORMATION/Lecture, Discussion

Principal goal is to familiarize students from all disciplines with the basic outlines of the developments of Western society and, therefore, the character of our collective identity. For the would-be history major, a secondary goal is the presentation of varieties of historical "angles"—cultural, political and military, economic and social—and the integration of these analytical approaches into a coherent, popular narrative. The medieval period is emphasized because our modern history is rooted in it. Students are advised to take both History 70 and 71 as parts of a whole, but either course may be taken without the other. Fulfills the *historical perspective* requirement.
Mr. Lucas/Offered every year

071 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE SEVENTEENTH CENTURY TO THE PRESENT/Lecture, Discussion

The goal is the same as History 070. This course covers the military revolution of the sixteenth century, the bureaucratic and scientific revolutions of the seventeenth century, the eighteenth-century Enlightenment, and the political, industrial, intellectual, and social revolutions of the nineteenth and twentieth centuries. Students are advised to take both History 070 and 071 as parts of a whole, but either course may be taken without the other. Fulfills the *historical perspective* requirement.
Mr. Lucas/Offered every year

074 THE WORLD AND THE WEST/Lecture, Discussion

This course surveys European interaction with the nonwhite world from the fifteenth to the twentieth century. While all dimensions of the European engagement overseas are touched upon, the course focuses on the social and cultural transformation of Europe as a result of the movements known as "expansion," "colonialism," and "imperialism." Required readings reflect a mix of contemporary sources and modern historical works.
Mr. Richardson/Offered periodically

080 INTRODUCTION TO MODERN ASIA/Lecture

A survey of modern historical trends in India, China, Japan, Southeast Asia, and Korea. Through political biographies, literary selections, and general histories, the course compares native traditions, colonial experiences, and postcolonial developments in Asia since roughly 1800. Fulfills the *historical perspective* requirement.
Mr. Ropp or Mr. Tanaka/Offered every other year

084 JAPANESE CIVILIZATION/Lecture, Discussion

Selected themes in contemporary and historical Japan. Fulfills the *historical perspective* requirement.
Mr. Tanaka/Offered periodically

090 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY/Lecture, Discussion

Starting with a brief assessment of the world in 1900, the course gives historical background to the contemporary global order. It helps students view their lives within a worldwide perspective in terms of politics, economics, and culture. Each year, particular problems or issues serve as a focus for lectures and discussions. Students write several essays to integrate class reading, lectures, and discussions. Daily reading of the *New York Times* is required. Fulfills the *historical perspective* requirement.
Mr. Ford/Offered every year

105 GREEKS AND BARBARIANS IN THE ANCIENT ECUMENE/Lecture, Discussion

Refer to course description under Geography 174.
Mr. Koelsch/Offered every other year

110 IMPERIAL EUROPE/Lecture, Discussion

An examination of culture and society in Western Europe in the imperial age (1870-1914). This course emphasizes the cultural roots of European imperialism and the impact of world power on Europe.
Mr. Richardson/Offered periodically

117 INTRODUCTION TO HEBREW BIBLE I: NARRATIVE AND LAW

Refer to course description under Hebrew 117.
Mr. Fox/Offered every year

124 ETHNICITY AND NATIONALISM IN MODERN EUROPE IN COMPARATIVE PERSPECTIVE/Lecture, Discussion

Starting with ethnic divisions in Europe, the course analyzes the strongest political force in our world today–modern nationalism–specifically its appeal and nature as they have changed over the past two centuries. This course fulfills the *comparative perspective* requirement.
Mr. Borg/Offered every year

125 DEVELOPMENT PROBLEMS/Lecture, Discussion

Refer to course description under International Development 125.
Ms. Thomas-Slayter/Offered every year

127 INTRODUCTION TO LATIN AMERICA

Refer to course description under International Development 130.
Mr. Jones/Offered every year

145 U.S. HISTORY THROUGH THE NOVEL/Lecture, Discussion

An introductory course in American history with a distinctive and somewhat unconventional approach, resting on the assumption that we can gain meaningful access to the past by reading fiction. Students learn how to approach imaginative literature from an historical perspective, and to appreciate the historical insight of writers who were especially keen observers of different aspects of the making of modern America. Fulfills the *historical perspective* requirement.
Mr. McCoy/Offered every year

157 THE AGE OF NERO/Lecture, Discussion
Refer to course description under Classics 157.
Mr. Burke/Offered every other year

158 MODERN ENGLISH HISTORY/Lecture, Discussion
Introduction to the historical development of culture, polity, and society in Great Britain from the mid-nineteenth century to the present. Topics covered include the rise of industrial society, parliamentary reform, the rise of political parties, the rise of labor, the British Empire, Ireland, women and society, and Africans and Asians in Britain.
Mr. Richardson/Offered periodically

161 BRITISH INDIA/Lecture, Discussion
Through the study of cultural and historical documents as well as modern historical scholarship, this course studies the nature of British rule in India in terms of the relationship between Indian and British peoples and societies over the period from the seventeenth century to the mid-twentieth century.
Mr. Richardson/Offered periodically

162 THE HISTORY OF THE MODERN MIDDLE EAST/Lecture, Discussion
This course focuses on Middle Eastern history and society from World War I to the present. Major themes include the collapse of the Ottoman Empire and the emergence of nation-states, colonial rule in the Arab world and the struggle for independence, the Arab-Israeli conflict, the rise of Islamic fundamentalism, and the impact of oil.
Mr. Little/Offered periodically

163 RUSSIA TO 1917
An introductory survey of Russian history from the ninth century A.D. to 1917. The class covers social, political, economic, and cultural themes in Russian history. Fulfills the *historical perspective* requirement.
Staff/Offered periodically

168 THE HISTORY OF CAPITALISM/Lecture, Discussion
This course examines the rise and development of "capitalist" society in Europe and the Americas and its "expansion" around the world from the sixteenth century. Through close attention to the historiographical debate, we explore sources of capital accumulation and industrialization in England, continental Europe, and the United States. We also examine globalization of economic relations, the "world capitalist system," and the impact of capitalism on society and culture. We pay close attention to the various theories of capitalist development such as the classical, Marxist, neo-classical, and the development/underdevelopment school.
Mr. Richardson/Offered periodically

169 INTRODUCTION TO INTERNATIONAL RELATIONS/Lecture, Discussion
The purpose of this course is to introduce key moments in the emergence of relations among nations in the modern world. The course examines the way nation-states, as political, social, economic, and cultural units, have interacted (often violently) and attempted to create order. The course begins with the reconceptualization of socio-political relations into the nation (before and after revolutionary social movements), and then examines the changes within that unit as well as the pressures from outside its boundaries that have led to periods of imperialism, idealism, the Cold War, and recent police actions. Discussion also includes the interplay between the efforts to form

an international order as defined by Europe and reactions in the non-West to that expansion. [*NOTE: This course fulfills the government major requirement for* Introduction to International Relations. *A student may* not *take* both *History 169 and Government 169 for credit.*]
Mr. Tanaka/Mr. Vitalis/Offered every year

174 THE JEWISH EXPERIENCE/Lecture, Discussion
A survey of the history of the Jewish community and the development of Judaism from the era of Alexander the Great (c.325 B.C.E.) to the present. This course examines the major political, religious, social, and economic trends of each period as they affected the evolving Jewish community and the development of Judaism. It emphasizes elements of change and continuity as well as the interaction of the Jewish community with the larger culture/community. Fulfills *historical perspective* requirement.
Staff/Offered every year

177 LATIN AMERICAN HISTORY SINCE 1825/Lecture, Discussion
A survey of Latin American nations from independence to the present with emphasis on the twentieth century. Major themes include the persistence of neocolonial social and economic structures, the emergence of nationalist and revolutionary movements after 1900, and U.S.-Latin American relations. Special emphasis on Mexico, Argentina, and Brazil. Fulfills the *historical perspective* requirement.
Mr. Little/Offered periodically

178 POLITICS AND HISTORY OF SOUTH AFRICA/Lecture, Discussion
Refer to course description under Government 178.
Ms. Grier/Offered every year

179 THE HISTORY OF TRADITIONAL AFRICA/Lecture, Discussion
An introduction to the history of Africa south of the Sahara. The course begins with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Zanj, Congo, and Zimbabwe and continues through to the arrival of Europeans. Attention is given to eastern, western, and southern Africa. The approach is largely historical and anthropological. Fulfills the *historical perspective* requirement.
Staff/Offered every other year

180 HISTORY OF MODERN AFRICA/Lecture, Discussion
This course introduces students to the major themes of modern African history. It begins with an orientation to precolonial Africa and then considers four main periods: (1) the imperial years, (2) the struggle for independence, (3) the 1960s as a decade of independence, (4) the 1970s and 1980s as a search for identity and development. Focus is primarily on the years since 1945. Fulfills the *historical perspective* requirement.
Staff/Offered every other year

181 TRADITIONAL CHINA/Lecture, Discussion
Focuses on Chinese life, institutions, and culture from the earliest times through the mid-nineteenth century. Creative literature, philosophical writings, and selected primary documents are used to supplement information presented in interpretive texts and lectures. Fulfills the *historical perspective* requirement.
Mr. Ropp/Offered every other year

182 MODERN CHINA/Lecture, Discussion

Introduces students to events, personalities, and concepts of particular importance for understanding China's history from the early nineteenth century to the present. Readings that present the Chinese view of events are used to supplement interpretative studies by Western scholars. Fulfills the *historical perspective* requirement.
Mr. Ropp/Offered every other year

184 MODERN JAPAN/Lecture, Discussion

A examination of Japanese political, social, economic, diplomatic, and cultural history from approximately 1800 to the present. This course focuses on issues that arise in the transition of a non-Western culture from a feudal society to a modern political-economic unit. Fulfills *historical perspective* requirement.
Mr. Tanaka/Offered every other year

200 AMERICA'S FORMATIVE YEARS/Lecture, Discussion

The emergence of distinctive forms of culture and society in English North America from the earliest colonial settlements to approximately 1760. A comparative regional approach, with special emphasis on New England (and the theme of Puritanism) and the Chesapeake (and the themes of race, slavery, and freedom).
Mr. McCoy/Offered periodically

201 ERA OF THE AMERICAN REVOLUTION/Lecture, Discussion

The origins, character, and consequences of the American Revolution, from the erosion of imperial authority in the 1760s and 1770s to the Constitutional Convention of 1787. Emphasis is on the relation of ideology and political ideas to social development.
Mr. McCoy/Offered every other year

202 THE EARLY AMERICAN REPUBLIC

The formation and testing of the early U.S. from the adoption of the Constitution to the passing of the Revolutionary generation in the 1820s. Emphasis is on ideology, public policy, and the problem of national integration during a period of profound domestic and international upheaval. (Please note: This course number was used for a recent course titled *U.S. Constitution to America's Second War of Independence.*)
Mr. McCoy/Offered every other year

203 SEMINAR IN U.S. URBAN HISTORY: COLONIAL - MODERN PERIOD/ Seminar, Discussion, Research

This course examines the urban experience in what is now the U.S. from its multiethnic colonial origins to its multiracial present. It pays particular attention to the relationship between the organization of space in the city and the social and political organization of the city, from witch-hunts to riots.
Ms. Deutsch/Offered periodically

204 INTERPRETATIONS OF AMERICAN HISTORY/Proseminar

A colloquium that takes a broadly conceptual and historiographical approach to the literature in early American history, from the origins of colonization to approximately 1820. Permission of the instructor is required.
Mr. McCoy/Offered periodically

205 HISTORY OF THE AMERICAN WEST/Lecture, Discussion

Cowboys, Indians, and goldminers; farmers, fur traders, railroad workers, and prostitutes; Chinese, Japanese, Mexican, and African Americans; and men and women of the frontier—all became part of the myth and history of the American West and of the nation. From gold and silver to Silicon Valley, from the Hopi to Hollywood, the course examines how the myth and history of the West were shaped by eastern dreams and how, in turn, those dreams were reshaped.
Ms. Deutsch/Offered every other year

208 THE U.S., 1900-1945/Lecture, Discussion

A survey of the U.S. from the progressive era through World War II. The course emphasizes the emergence of modern American culture, the rise of an imperial presidency, and the growth of government intervention in the economy from Teddy Roosevelt to Franklin Roosevelt. Topics include the decline of socialism, the impact of war on American society, and the persistence of racial and ethnic conflict.
Mr. Little/Offered every other year

209 THE U.S. SINCE 1945/Lecture, Discussion

A survey of American political, social, and cultural history from Hiroshima to the 1990s. The course focuses on the rise and fall of an affluent society, the emergence of an imperial foreign policy, and the shift from traditional party politics to a more pluralistic political system. Major topics include anticommunism at home and abroad, the impact of the mass media on postwar American culture, the civil rights revolution, the war in Vietnam, and Reaganomics.
Mr. Little/Offered every other year

210 RESEARCH SEMINAR IN EARLY AMERICAN HISTORY/Research Seminar

A combination of individual and collective endeavor, this course focuses on mastering the arts of historical research and writing. Each student undertakes a major research project on a topic of his or her choice in early American history, broadly defined to include the period down through and including the Civil War. Permission of the instructor is required.
Mr. McCoy/Offered periodically

211 NATIVE AMERICAN HISTORY THROUGH AUTOBIOGRAPHY/Lecture, Discussion

One purpose of this course is to begin to explore U.S. history from the perspectives of Native Americans. Several autobiographers from a single group are read to recognize the variety within groups so not to reduce their individual history to "the" Indian experience. This is also a course about autobiography and narrative, and about what "history" is.
Ms. Deutsch/Offered every other year

212 U.S. URBAN HISTORY/Lecture, Discussion

This course examines major themes in the social, economic, and cultural development of American urban society from colonial origins to the present. It focuses on the process of urbanization and on the adaptation of various social groups and classes to urban life and to the complexity of urban society. It also examines the transformation of urban neighborhoods and ghettoes, social reform movements in the city, and urban planning.
Ms. Deutsch/Offered periodically

213 GENDER AND THE CITY IN THE U.S./Discussion, Research
Focusing on the nineteenth and twentieth centuries, the course examines where urban life for men and women diverged and where it met. Readings on men, women, and urban space, reform movements, utopian ideals, and other topics are followed by student research projects using local resources.
Ms. Deutsch/Offered periodically

214 THE AMERICAN CIVIL WAR/Lecture, Discussion
An examination of the events and trends that precipitated the greatest crisis in American history, the Civil War of 1861-65. The course includes consideration of the behavior and experience of Americans during the war itself.
Mr. McCoy/Offered every other year

215 THE AGE OF LINCOLN/Proseminar
A reading, discussion, and research course that focuses on an extraordinary individual and his times. Appropriate emphasis is placed on biography, and on the relationship between the private and the public in Abraham Lincoln's life, which becomes the vehicle for understanding better the distinctive problems and concerns of American society, culture, and politics from approximately 1815 through the end of the Civil War.
Mr. McCoy/Offered every other year

216 AMERICAN HISTORY IN COMPARATIVE PERSPECTIVE/Proseminar
A reading and discussion course that explores the advantages of taking a comparative approach to selected key themes and issues in the history of the United States. Permission of the instructor is required.
Mr. McCoy/Offered periodically

218 U.S. IN THE 1920s and 1930s/Lecture, Discussion
From speakeasies to "Happy Days...," from flappers and suffragettes to forgotten men, there are common threads to be seen. These decades abounded with experiments, social, artistic, and technological, and with individuals–Henry Ford, Charles Lindbergh, Franklin and Eleanor Roosevelt, Huey Long–who believed each had the power single-handedly to remake the world. This course traces developments in American popular culture, politics, economics, and society through major novels, speeches and other documents, secondary sources, and films.
Ms. Deutsch/Offered periodically

219 HISTORY OF AMERICAN WOMEN/Lecture, Discussion
This course examines the female experience in the United States, focussing on issues of power, race, ethnicity, and class, as well as on concepts of work, family, and gender, with their ramifications for the world of both sexes. Fulfills the *historical perspective* requirement.
Ms. Deutsch/Offered every year

220 WORCESTER HISTORICAL MUSEUM/PUBLIC HISTORY/Research Seminar
Students in this seminar research a paper focusing on a particular aspect of local history. Themes for the course change annually. In 1992-93, for example, students focus on the history of Worcester's black community. The research generated in this

course is used as the basis of an exhibit at the Worcester Historical Museum.
Ms. Greenwood/Offered every year.

221 AFRICAN-AMERICAN HISTORY/Lecture, Discussion
Examines the historical experience of blacks in America from the colonial period to the present. Among the topics explored are the evolution of slavery, changing conceptions of race, blacks in the Civil War and Reconstruction, the Great Migration, and the Civil Rights Movement. Fulfills the *historical perspective* requirement.
Ms. Greenwood/Offered every other year.

222 HISTORY OF THE SOUTH/Lecture, Discussion
This course explores the history of the South from the colonial period to the present, focusing on how the South developed as a distinctive region of the United States. Among the themes examined in this course are the development of slavery; the impact of slavery on the economy, politics, and culture of the South; race, class, and gender in the Old and New South; the myth and reality of the New South; the South in the twentieth century.
Ms. Greenwood/Offered every other year.

223 THE CIVIL RIGHTS MOVEMENT/Lecture, Discussion
This course examines the roots and evolution of the Civil Rights Movement from the 1930s to the present. Topics explored include civil rights as a grassroots movement; the New Deal, World War II and civil rights; the emergence of Martin Luther King; women and the Civil Rights Movement; black power; the disintegration of the movement; the meaning of civil rights today.
Ms. Greenwood/Offered every other year.

224 HISTORY OF AFRICAN/AMERICAN WOMEN/Seminar
The course examines the historical experience of African American women from the period of slavery to the present. Particular attention is paid to black women's role in the economy and in politics, to resistance to racial and sexual oppression, and to the historical relationship to white women's movements. Comparisons and contrasts are made between black women in the U.S. and black women in the Caribbean and South Africa.
Ms. Grier/Offered every other year

227.1 AMERICAN THOUGHT AND CULTURE, 1740-1865/Lecture, Discussion
Readings in the formation of an American culture from participants and witnesses, from the Great Awakening to issues of pluralism and cultural variety arising out of urbanization, slavery, and the Civil War.
Mr. Koelsch/Offered every other year

227.2 AMERICAN THOUGHT AND CULTURE SINCE 1865/Lecture, Discussion
Readings from witnesses to shifts in American culture from mid-nineteenth century to the era of multiculturalism. May be taken independently of History 227.1.
Mr. Koelsch/Offered every other year

228 USES OF THE PAST IN HISTORY/Proseminar
This course examines the different ways that the past has been employed to construct various historical notions. The past is considered as a constantly changing archive from which notions of contemporary society are constructed. Readings and discussion

focus on the different artifacts, such as symbolic forms, relics, and writings that are used to remind us of the past, and on the way that their selection and presentation impart particular ideals.
Mr. Tanaka/Offered every other year

229 CLASSICAL TRADITIONS IN MODERN THOUGHT/Proseminar

Readings from the history of classical scholarship and the newer field of "reception studies" illustrate perceptions and uses of the world of classical antiquity in Western and American culture since the Renaissance. Oral reports are paralleled and followed by a substantial paper on a topic of the student's choice.
Mr. Koelsch/Offered every other year

231 AMERICA IN THE GILDED AGE/Proseminar

This course focuses on one of the most volatile periods of American history, the Gilded Age, the period from 1877 to the turn of the century. Through intensive readings and discussions students examine Gilded Age society, culture, economy, and politics. Among topics explored are immigration and urbanization, industry and labor relations, family life, and agrarian movements.
Ms. Greenwood/Offered every other year.

232 AMERICAN VICTORIAN CULTURE/Seminar

Selected topics in American cultural history from 1815 to about 1900; methods and sources in cultural history. Approximately half the course is spent in oral reports and discussion of recent "model" or seminal works; the remaining weeks are spent in intensive research and the writing of an article-length paper.
Mr. Koelsch/Offered every other year

233 SEMINAR ON ARMS CONTROL

Refer to course description under Government 234.
Mr. Lane/Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/Discussion

Refer to course description under Geography 234.
Mr. Koelsch/Offered every other year

237 TOPICS IN U.S. LABOR HISTORY/Seminar

This course examines the changing meaning and nature of work and the lives and organizations of workers.
Ms. Deutsch/Offered periodically

238 U.S. FOREIGN RELATIONS SINCE 1914/Lecture, Discussion

Students examine the emergence of the U.S. as a major world power in the twentieth century. The course focuses on the domestic sources of foreign policy and the assumptions of the major policy makers (Wilson through Bush). Important themes include the American response to a revolutionary world since 1914, the increasingly dominant role of the president in the making of U.S. foreign policy, and the changing position of the U.S. in the international economy.
Mr. Little/Offered every year

239 AMERICAN CONSTITUTIONAL LAW/Lecture, Discussion

Refer to course description under Government 254.
Mr. Miller/Offered periodically

243 AMERICAN ANTIQUARIAN SOCIETY SEMINAR IN AMERICAN STUDIES/ Seminar

Given at the American Antiquarian Society (about two miles from Clark), the course affords students an opportunity to do original research in the society's unique holdings. Students should apply in the spring through Professor Drew McCoy, History Department, Clark University.
American Antiquarian Society Staff/Offered every year

245 U.S. FOREIGN POLICY: MIDDLE EAST/Lecture, Discussion

Refer to course description under Government 245.
Mr. Lane/Offered periodically

246 HISTORY OF AMERICAN HIGHER EDUCATION/Seminar

Oral reports and discussion of recent work on the role of higher education in American culture from colonial times to the twentieth century, followed by intensive work on a major term paper.
Mr. Koelsch/Offered every other year

249.1 TOPICS IN AMERICAN SOCIAL HISTORY/Seminar

This seminar is an intensive introduction to important works and major issues in American social history, with particular emphasis on the transformation of work and working class life, the growth of cities and their culture(s), the African-American experience, and the history of sexuality. Each student occasionally leads class discussions and writes a historiographical essay on a topic in American social history. This course requires the permission of the instructor.
Ms. Deutsch/Offered periodically

249.2 RESEARCH SEMINAR IN AMERICAN SOCIAL HISTORY/Research Seminar

In this course every student undertakes an intensive research project culminating in an article-length essay. Such research generally builds on readings done in History 249.1, but students who have not taken 249.1 may apply to take 249.2 with the permission of the instructor. This course requires the permission of the instructor.
Ms. Deutsch/Offered periodically

250 THE FORMATION OF THE MODERN STATE: GROUP CONSCIOUSNESS, INDIVIDUALISM, AND SOCIAL ORGANIZATION IN "OLD EUROPE," 1550-1789/Lecture, Discussion

An examination of pre-French Revolutionary Europe as a corporative and customary political culture. This course studies how that culture was altered by militarism, absolutism, mercantilism, early capitalism, modern science, and the requirements of the international system of European states. Students gain an appreciation of the social and ideological legacies of the old regime in our own time. Fulfills the *historical perspective* requirement.
Mr. Lucas/Offered every other year

251 THE COMPARATIVE STUDY OF REVOLUTIONS: THE FRENCH

REVOLUTION OF 1789 AND THE BEGINNINGS OF MODERN REVOLUTIONS/ Lecture, Discussion

Analysis of old and new ideas of revolution including ritual, resistance, reactionary restoration vs. innovation; the "democratic" revolution; the psychology, sociology, and social psychology of revolutionary behavior; religion and revolution; violence; and the relevance of the French Revolution to twentieth-century issues. Fulfills the *comparative perspective* requirement.
Mr. Lucas/Offered every other year

252 NINETEENTH-CENTURY EUROPE/Lecture, Discussion

Centers around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.
Mr. Borg/Offered every other year

253 TWENTIETH-CENTURY EUROPE/Lecture, Discussion

Concentrates on the characteristic problems of Europe in a century of war, economic convulsion, and political instability.
Mr. Borg/Offered every year

254 EMPIRE AND RACE IN BRITISH HISTORY/Proseminar

This course explores the British encounter with non-"white" people in the outside world, and in Britain itself, in the context of changing British views on empire and imperialism. Its primary focus is on British involvement with Africans and Asians from the eighteenth to the mid-twentieth century. The course is particularly concerned with understanding how this experience contributed to the historical construction of a British national identity and a masculine ideal.
Mr. Richardson/Offered periodically

255 GLOBAL RELATIONS: TWENTIETH CENTURY/Lecture, Discussion

This is an advanced reading course on the nature of global relations in the twentieth century. Our aim is to gain a comprehensive and critical introduction to the different ways of conceptualizing those relations.
Mr. Richardson/Offered periodically

256 POLITICS OF THE SOVIET UNION AND ITS SUCCESSOR STATES/Lecture, Discussion

Refer to course description under Government 256.
Ms. Sochor/Offered every year

257 EUROPE SINCE 1945/Proseminar

Readings and discussions in modern Europe since World War II.
Students choose their readings according to their own historical interests.
Mr. Borg/Offered every year

258 ENGLAND'S OLD REGIME/Lecture, Discussion

Examines the formation of the peculiarities of the English "character," state, society, religions, and the world's first modern industrial economy, 1500-1850. To help students grasp these peculiarities, a special emphasis is placed on comparisons of England's experience with continental Europe's and on the use of historical

psychology. Fulfills the *historical perspective* requirement. Formerly titled *Towards Modern England.*
Mr. Lucas/Offered every other year

259 MODERN GERMANY/Lecture, Discussion
An examination of the convulsive course of German history over the past century: unification under Bismarck, the Second Empire, the First World War, the Weimar Republic, the Third Reich, the Second World War, divided postwar Germany, and reunification. Fulfills the *historical perspective* requirement.
Mr. Borg/Offered every other year

260 NATIONALISM AND GLOBAL INTERDEPENDENCE/Seminar
This course examines the use of an increasingly interdependent world and the parallel phenomenon of resurgent nationalism. It studies the growth of a transnational culture in the context of contrary forces emphasizing local identities and commitments. We question the possibility of creating institutional structures capable of dealing with these dual forces in a manner which is both equitable and effective in securing development and peace on a world scale.
Mr. Richardson/Offered periodically

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD
Refer to course description under Classics 262.
Mr. Burke/Offered every other year

263 AFRICANS AND ASIANS IN EUROPEAN HISTORY/Lecture, Discussion
This course investigates how European culture affected the European experience with Africans and Indians, as well as the impact of that experience on European culture in the period from the Enlightenment to the twentieth century. It includes the study of key thinkers such as John Locke, Charles Darwin, and Joseph Conrad, whose ideas allow access to the racial thought worlds of their societies; works on European racial attitudes such as Philip Curtin's *The Image of Africa;* and selections from African and Asian critics of European culture and rule like Edward Wilmot Blyden and Mahatma Gandhi.
Mr. Richardson/Offered periodically

266 HISTORICAL IDENTITIES/Seminar
This course explores the ways in which societies have created and maintained unifying myths of identity through time. We are particularly concerned to understand how such myths and the process of myth making have been affected by intercultural relations.
Mr. Richardson/Offered periodically

268 FOREIGNERS PERCEIVED: INTERCULTURAL RELATIONS THROUGH TRAVEL WRITINGS/Proseminar
An exploration through travel writings of the ways that peoples conceptualize the foreign. Issues discussed are the ways by which intellectual boundaries are established between societies, the meaning and import of the categories created by those boundaries, the mutual dependence on those notions, and the ways that such categories affect relations among different cultures.
Mr. Tanaka/Offered periodically

271 IN SEARCH OF HUMANITY: EIGHTEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

Examines the Enlightenment and its heirs and critics: the scientific revolution, philosophical reformism, and early conservative romanticism. Emphasis is on rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities as seen through great secondary treatments of the Enlightenment (which also introduce the student to various approaches to intellectual history). Original sources include Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny. Fulfills the *values perspective* requirement.
Mr. Lucas/Offered every other year

272 IN SEARCH OF HUMANITY: NINETEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

Examines the elaboration of the Enlightenment by its heirs and critics. Emphasis is same as in 271, but focus shifts to an analysis of political and economic liberalism, social Darwinism, racism, and "utopian" socialism in England and France followed by an analysis of nationalism, Marxism, positivism, old and new conservatisms, and the reassessment of the values and progress of European civilization among principally Italian and German thinkers. Fulfills the *values perspective* requirement.
Mr. Lucas/Offered every other year

273 MODERN EUROPEAN CULTURE/Lecture, Discussion

Introduction to the study of European cultural/intellectual history (late nineteenth century and twentieth century) through investigation of seminal topics such as evolutionary thought, classical social and economic theory, the self, modernism, gender, and race. Sources include literature, theory, art, film, and modern historical work.
Mr. Richardson/Offered every year

276 MODERN JEWISH HISTORY AND THOUGHT/Lecture, Discussion

Discusses the emergence of the Jew into modern society after the French Revolution. The political and ideological struggle over emancipation and adjustment are traced through the growth of Jewish denominationalism in Western Europe. The competing ideologies of Jewish nationalism (including those of both Zionist and non-Zionist character) are discussed in the context of Eastern European Jewry and its unique contribution to modern Jewish identity. The course concludes with an examination of the Weimar Republic in Germany (1918-1933) and the independent Polish State (1918-1939).
Staff/Offered every other year

278 THE HOLOCAUST: A STUDY OF GENOCIDE/Lecture, Discussion

Refer to course description under Sociology 204.
Ms. Tenenbaum/Offered every year

280 SOVIET FOREIGN POLICY AND ITS AFTERMATH/Lecture, Discussion

Refer to course description under Government 280.
Ms. Sochor/Offered every other year

280.1 SEMINAR IN CHINESE HISTORY/Seminar

Topical research seminar in Chinese history for those with a concentration in Asian

Studies. Prerequisite: Asian Studies 080 or 181 or 182, or by permission.
Mr. Ropp/Offered periodically

280.4 SEMINAR IN JAPANESE HISTORY/Research Seminar

Examines selected topics in Japanese history, for those with a concentration in Asian Studies. Prerequisite: Asian Studies 080 or 084 or permission of instructor.
Ms. Aoki or Mr. Tanaka/Offered periodically

281 THE PEOPLE'S REPUBLIC OF CHINA/Lecture, Discussion

A general survey of life in the People's Republic of China from 1949 to the present. This course includes a general history of the People's Republic, and special attention to such themes as politics, society, family life, economics, foreign relations, literature, and the arts.
Mr. Ropp/Offered every other year

282 CHINESE WOMEN IN LITERATURE AND SOCIETY/Lecture, Discussion

Examines the changing role of women in Chinese society from the seventeenth century to the present, primarily through the reading and discussion of Chinese literature in English translation.
Mr. Ropp/Offered every other year

283 JAPANESE CULTURE AND ECONOMIC DEVELOPMENT/Lecture, Discussion

A study of the relationship between Japanese culture and the economic development of Japan from the fifteenth century to the present. Emphasis is placed on the evolution of economic institutions and business practices within the general context of Japanese culture.
Ms. Aoki/Offered periodically

284 CULTURAL IDENTITY AND THE NATION STATE /Seminar

Refer to course description under Psychology 265.
Mr. Tanaka, et al./Offered periodically

284.1 JAPAN SINCE WORLD WAR II/Lecture, Discussion

Offers an overview of Japanese history and culture in the forty-five years since World War II as well as an in-depth exploration of several key areas of contemporary Japanese society. Readings from a variety of disciplines focus on topics such as: the Japanese "economic miracle," interpersonal relations, the changing roles of women in Japan, challenges to traditional values in post-war fiction, urban and rural social structure, political power and policy making of the Japanese government.
Staff/Offered periodically

285 JAPANESE FOLKLORE/Proseminar

The history of Japan as conceived, interpreted, and contested in historical writing and in popular memory, including folklore and popular literature.
Ms. Aoki/Offered periodically

288 THE ATOMIC BOMB/Proseminar

Through readings and discussion, this course explores the different ways that the bomb has affected modern life. Includes the development of atomic weapons, the decision to use the bomb in 1945, the place of Hiroshima in postwar Japan, and the

role of atomic weaponry in the contemporary arena of international relations.
Mr. Tanaka/Offered every other year

289 JAPANESE THOUGHT/Proseminar

An inquiry into different strands of thought that have surfaced throughout Japanese history. Prerequisite: History 080 or 084, or by permission of instructor.
Ms. Aoki or Mr. Tanaka/Offered periodically

290 DEVELOPMENT PROJECT MANAGEMENT/Seminar

Refer to course description under International Development 290.
Mr. Ford/Offered every year

291 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/Seminar

Substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the new international economic order, or issues in U.S. foreign policy. The course is designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor.
Mr. Little/Offered every year

293 HISTORY AND PERSONALITY/Proseminar

Through readings and discussions the seminar investigates the relationship between select "great" personalities of the twentieth century and history. We consider the role of personality in "shaping" events, modern notions of the self, and the mythic functions of the "great" personality.
Mr. Richardson/Offered periodically

294 TWENTIETH-CENTURY WESTERN CULTURE/Proseminar

An intensive study of aspects of culture and thought in the twentieth-century West. Topics covered include modernism, psychoanalysis and behavioral science, structuralism, deconstruction, feminism, race, and popular culture.
Mr. Richardson/Offered periodically

295 CAPSTONE/Proseminar, Discussion

Readings and discussions in the history of the idea of history from Thucydides until the present.
Mr. Borg, Staff/Offered every year

296 MODES OF INTERPRETATION/Seminar

Refer to course description under History 396.
Ms. Deutsch and Mr. Tanaka/Offered periodically

299.1 DIRECTED READINGS/Tutorial

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor. Prerequisite: permission of instructor. Offered for variable credit.
Staff

299.2 RESEARCH PROJECTS/Tutorial

Undergraduates, normally juniors and seniors, may construct an independent

research course with an instructor of their choosing. Prerequisite: permission of instructor. Offered for variable credit.
Staff

DEPARTMENTAL HONORS

299.8 HONORS THESIS RESEARCH

Honors students receive up to two credits for thesis research. Honors students preparing for the comprehensive exam receive credit for their reading under History 299.1. Offered for variable credit.
Staff/Offered every year

299.9 INTERNSHIP

The student who undertakes an interdisciplinary internship for more than two credits may receive up to two credits in history and the remainder in another department. Prerequisite: permission of instructor and of chair. Offered for variable credit.
Staff

GRADUATE COURSES

300 READINGS IN AMERICAN COLONIAL HISTORY/Tutorial

Independent studies. Offered for variable credit.
Mr. McCoy

301 STUDIES IN THE AGE OF THE AMERICAN REVOLUTION/Tutorial

Independent studies. Offered for variable credit.
Mr. McCoy

303 SEMINAR IN U.S. URBAN HISTORY/Seminar

Refer to course description under History 203.
Ms. Deutsch/Offered periodically

304 INTERPRETATIONS OF AMERICAN HISTORY/Proseminar

Refer to course description under History 204.
Mr. McCoy/Offered periodically

310 RESEARCH SEMINAR IN EARLY AMERICAN HISTORY/Research Seminar

Refer to course description under History 210.
Mr. McCoy/Offered periodically

313 GENDER AND THE CITY IN THE U.S./Discussion, Research

Refer to course description under History 213.
Ms. Deutsch/Offered periodically

315 STUDIES IN ECONOMIC HISTORY/Tutorial

Independent studies. Offered for variable credit.
Staff

332 AMERICAN VICTORIAN CULTURE/Seminar

Refer to course description under History 232.
Mr. Koelsch/Offered every other year

333.1 ADVANCED TOPICS IN U.S. WOMEN'S HISTORY/Seminar, Discussion, Readings
An advanced readings course in women's history looking at major new works and theoretical issues.
Ms. Deutsch/Offered every other year

333.2 ADVANCED TOPICS IN U.S. WOMEN'S HISTORY/Research Seminar
An advanced research seminar for topics in U.S. women's history.
Ms. Deutsch/Offered every other year

335 STUDIES IN NINETEENTH-CENTURY U.S. HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. McCoy

337 STUDIES IN DIPLOMATIC HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Little

341 STUDIES IN AMERICAN THOUGHT AND CULTURE/Tutorial
Independent studies. Offered for variable credit.
Mr. Koelsch, Staff

344 STUDIES IN RECENT AMERICAN HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Little, Staff

345 AFRICAN-AMERICAN HISTORY/Seminar, Readings, Discussion
Intensive readings and discussion of literature of African-American history.
Ms. Greenwood/Offered periodically

346 AFRICAN-AMERICAN HISTORY/Research Seminar
Research seminar on topics in African-American history. Hist. 345 is a prerequisite for this course.
Ms. Greenwood/Offered periodically.

349.1 TOPICS IN AMERICAN SOCIAL HISTORY/Seminar
Refer to course description under History 249.1.
Ms. Deutsch/Offered periodically

349.2 RESEARCH SEMINAR IN AMERICAN SOCIAL HISTORY/Research Seminar
Refer to course description under History 249.2.
Ms. Deutsch/Offered periodically

350 STUDIES IN EARLY MODERN EUROPEAN HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Lucas

351 STUDIES IN EUROPEAN INTELLECTUAL HISTORY/Tutorial
Independent studies. Offered for variable credit. Papers and discussion.
Mr. Lucas or Mr. Richardson

352 STUDIES IN MODERN EUROPEAN HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Borg

353 STUDIES IN MODERN BRITISH HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Richardson

354 STUDIES IN MODERN CULTURAL/INTELLECTUAL HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Richardson

355 STUDIES ON IMPERIALISM/Tutorial
Independent studies. Offered for variable credit.
Mr. Richardson

380 STUDIES IN AFRICAN HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Ford

383 STUDIES IN CHINESE HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Ropp

384 STUDIES IN JAPANESE HISTORY/Tutorial
Independent studies. Offered for variable credit.
Mr. Tanaka

391 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/Seminar
Refer to description under History 291.
Mr. Little/Offered every year

395 PRACTICUM IN THE TEACHING OF HISTORY
Offered for variable credit.
Mr. Ford, Staff

396 MODES OF INTERPRETATION/Seminar
This course explores new frontiers of historical methods. It also serves as an introduction to theory, concentrating not on acquiring terms or jargon, but on understanding new approaches to texts and theories of causation, change, and persistence which, though they emerge from a variety of disciplines, affect all fields of history.
Ms. Deutsch and Mr. Tanaka/Offered periodically

399 GRADUATE READINGS
Offered for variable credit.
Staff

International Development and Social Change

PROGRAM FACULTY

Barbara P. Thomas-Slayter, Ph.D., *director, International Development Program:* local institutions and organizations, women and public policy, peasant behavior

Richard B. Ford, Ph.D., *director, International Development Research*: African history, resource management and international development

Elaine Brown, Ph.D.: political economy and ecological anthropology, Southeast Asia, indigenous peoples and peasant livelihood systems, and gender

Jeffrey Jones, Ph.D.: Central America, small farmer behavior, forestry resource management, agricultural development, geographic information systems for resource management

Harry Schwarz, B.C.E., P.E.: resource management, water resources, environmental impact of development

Ann Seidman, Ph.D.: regional economics, African development, project analysis, development theory

ADJUNCT FACULTY

Hussein Adam, Ph.D.: African politics, political theory, nongovernmental organization

Robert Bradbury, Ph.D.: health planning, health systems analysis, health administraion

J. Ronald Eastman, Ph.D.: cartography, geographic information systems

Jacque L. Emel, Ph.D.: resource management, political geography, hydrology

Cynthia Enloe, Ph.D.: women and politics, militarization, Asian politics, British politics, ethnic and racial politics

Beverly C. Grier, Ph.D.: African politics, international development, women's studies, and U.S. black politics

Robert C. Hsu, Ph.D.: economic development, comparative economic systems, Chinese and Japanese economics, international economics

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

Gerald J. Karaska, Ph.D.: regional economic development

Roger Kasperson, Ph.D.: hazards, environment and society, global change

Dorothy Kaufmann, Ph.D.: language and culture in the French-speaking world

Laurence A. Lewis, Ph.D.: geomorphology, tropical agriculture and environment

Robert Cameron Mitchell, Ph.D.: environment and society, risk perception, survey research methodology

Mohammed Ansari Nawawi, Ph.D: theory and philosophy of development, Asian development, Third World politics

Richard Peet, Ph.D.: political economy, Marxist geography

Frank Puffer, Ph.D.: regional economics, African economic development, health economics

Dianne Rocheleau, Ph.D.: human/political/systems ecology, Third World forestry and agriculture

Paul S. Ropp, Ph.D.: Asian history, comparative history

Zenovia A. Sochor, Ph.D.: Soviet Union and its successor states, comparative politics, foreign policy

Henry J. Steward, Ph.D.: cartography, remote sensing

Stefan Tanaka, Ph.D.: Japanese history, intercultural relations

B.L. Turner II, Ph.D.: cultural/human ecology, global change, Third World agriculture

PROGRAM

International Development and Social Change (I.D.) is an interdisciplinary program with teaching, training, and research components. It offers the M.A. degree, a B.A. major, and an accelerated five-year B.A./M.A. program. I.D. was founded in the mid-1970s as a cross-disciplinary effort among the Graduate School of Geography; the Environmental Affairs Program; and the Departments of Government, Economics, and History. Subsequently this interdisciplinary approach has been enhanced by the incorporation of anthropology, programmatic collaboration with the Graduate School of Management, and the establishment of the Center for Technology, Environment, and Development (CENTED) of which I.D. is a founding partner.

The teaching program is designed to introduce students to the complex issues involved in international development, acquaint them with a range of research activities, and prepare them for careers and participation in international fields. It attempts to orient majors to the changing world in which we live and to the increasing role developing societies play in the interdependence of the world's social, economic, and political systems. The program offers nonmajors an opportunity to participate in its courses, seminars, or other international development activities. Undergraduates are encouraged to work out a double major with I.D. and one of the cooperating departments.

Majors are expected to acquire basic skills of economic and social analysis as well as a generalized orientation toward development and social change. These skills and attitudes are useful for any number of careers in either the private or the public sector that deal with developing areas of the world and relations between North and South. They are also relevant to further graduate study and specialization. To attain these skills, students in the program work in a combined graduate-undergraduate setting, which blends the breadth of liberal arts with the specialization of professional training. Thus, the curriculum includes existing departmental courses, new cross-disciplinary courses, and applied research. Students also participate in seminars, symposia, internships, and summer research activities.

The research program offers faculty and students opportunities to work individually and cooperatively on topics of concern relating to international development and social change. Recent research projects have included:

- analyzing agro-forestry and resettlement patterns in Costa Rica
- developing a national environmental monitoring system in collaboration with Sudan's Institute of Environmental Study
- assessing household and community responses to resource problems in several African countries
- investigating the roles of women in local institutions managing resources in Africa, Asia and Central America
- developing a plan to use geographic information systems in assessing land use problems on the perimeter of Nakuru National Park in Kenya
- analyzing patterns of land use and deforestation in Honduras, and
- working with the National Environment and Human Settlement Secretariat in Kenya to implement Participatory Rural Appraisals in Kenyan villages.

In all our research, we are concerned not only with the relationship among technological intervention, finite resources, and social change in the developing world, but also with relationships between poor and more affluent nations. We also emphasize collaborative research with other institutions.

The Program for International Development and Social Change is flexible, permitting students to participate in designing their own interdisciplinary curriculum for the study of development problems. It aims to meet the needs of three different groups of students:

First, it is one of the few programs in the United States that offers a liberal arts B.A. degree focused on development. Students may major in international development or they may take international development as a double major in conjunction with a related discipline such as geography, economics, government, or sociology.

Second, it provides an opportunity for undergraduates qualified to go on in the program to complete a five-year B.A./M.A. degree with a view to a career in the development field.

Third, it provides a self-contained program for students coming from other universities who want to obtain the necessary background and complete an M.A. in order to pursue a career in the development field.

UNDERGRADUATE PROGRAM

Undergraduates majoring in international development are expected to:

1. attain an understanding of the development process and its political, economic, historical, theoretical, institutional and ecological aspects
2. master basic skills including quantitative skills and techniques of economic and social analysis, and are strongly encouraged to develop competence in a foreign language
3. develop an investigative/research approach to an actual problem and attempt to apply the growing body of theoretical knowledge in an internship experience
4. pursue a career track–for example, resource management or women in development–chosen in consultation with a faculty advisor.

Course Requirements for Majors

1. *Basic orientation:* Majors must take the introductory course I.D. 125,Development Problems; *a course in development economics or economic case studies; three additional core courses in politics, resource management, and sociocultural issues; and Economics 010 and 011,* Issues and Perspectives *and* Principles of Economics. *Students transferring from other majors or universities may substitute equivalent courses.*
2. *Area of specialization:* Majors will take at least four courses in an area of specialization they select in consultation with an I.D. faculty advisor. Students may follow the pattern set out in one of several established tracks–for example, resource management, rural development, anthropology, ethnicity and nationality, or women and development. A student may prefer to design a course sequence, subject to approval by an appropriate faculty member, that creates a new focus. In every case, the area of concentration should be looked upon as an opportunity for students to link their interest in development with a focus in a specialized field.
3. *Skill courses:* Majors must take a course in social sciences research methods and two courses from the following: computer science, statistics, or cartography. They are also encouraged, in consultation with a faculty advisor, to develop a language proficiency relevant to their chosen development area.

MASTER'S PROGRAM

The Master's Program in International Development affords the graduate student the opportunity to work closely with faculty members from a broad range of disciplines. The program allows the student a large degree of flexibility in terms of thesis research while emphasizing a core of required classes designed to develop the student's quantitative, analytical, and research skills. All I.D. graduate students must take a course in each of the following areas: development theory, project analysis and management, and research methods. Class work or demonstrated competence is also required in two of the following skills: statistics, geographic information systems, computer science, remote sensing, or language relevant to a student's field work at an intermediate level of proficiency. A minimum of eight course units is necessary for the M.A. degree. There are also opportunities for internships with development agencies in the United States, and the program facilitates opportunities for students to have internships overseas.

Students are encouraged to develop their own fields of specialization in preparation for thesis research, which should be undertaken in the second year of study. Specializations that have been selected by graduate students include women and development, resource management, development theory, rural development, international political economy, household economic behavior, local organization and participation, public health, credit and small enterprise, and comparative ethnic relations. The thesis is normally completed in the third or fourth semester and may include field research.

COURSES

015 INTRODUCTION TO ECONOMIC GEOGRAPHY/Lecture

Theories about the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and environmental problems. These include overpopulation, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.

Mr. Angel, Staff/Offered every year

027 GEOGRAPHY OF THE THIRD WORLD/Lecture, Discussion

Provides a cross-culture knowledge and appreciation of Third World societies through a "geo-history" of Latin America, Africa, and Asia. The course is suited to students who have little background or knowledge of the Third World, but who wish to understand the conditions under which the majority of the world's people exist.

Mr. Peet/Offered every year

037 GENDER, SPACE, AND ENVIRONMENT/Lecture, Discussion

Students explore how gender is reflected in the landscape, in our settlement and land use patterns, in environmental history, and in our present ecological science and practice from the global to the local level. The class combines lectures, readings, discussions, films, and local field trips. We review feminist and other alternative explanations of the gendered nature of knowledge, access, use, and control of space and resources in a variety of environments, past, present, and possible. Regional focus on New England.

Ms. Rocheleau/Offered every year

050 LOCAL ACTION GLOBAL CHANGE/Lecture, Discussion

Brings a global perspective to critical issues, cutting across regions, cultures, and nations at the end of the twentieth century. Each semester the class examines five topics, including: 1)homelessness and what it means to be homeless in New York, L.A., Rio, Khartoum, or Moscow; 2) family planning/spacing and access to birth control technologies whether in rural Africa, Japan, or Ireland, including the dilemmas surrounding abortion in the United States; 3) religious fundamentalism and all it portends for societies as diverse as Iraq, India, or the U.S. 4) AIDS and how we deal with it in Worcester, New York, or Tanzania; 5) tribalism vs. globalism–the disparate inclinations of our world today as we surge toward both global cultural conformity and ethnic and cultural diversity. Our focus is to understand the complexities of these issues in the context of International Development and to decide where we individually and as a community can "act" in regard to "a world at risk."
Mr. Ford and Ms. Thomas-Slayter/Offered every year

060 AFRICA AND THE WORLD/Lecture, Discussion

The course examines the historical and contemporary relationships between Africa and the rest of the world, emphasizing the two-way nature of the relationship: Africa's influence on world history and events and the influence of the world on Africa. Specifically, the course looks at: relationships between Africa and Europe, the U.S., the socialized world, the Muslim world, and the Middle East, and ends with a special focus on South Africa and the world. Fulfills the historical perspective requirement.
Ms. Grier/Offered every other year

090 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY/Lecture, Discussion

Starting with a brief assessment of the world in 1900, the course offers historical background to the contemporary global order. It helps students view their lives within a worldwide perspective in terms of politics, economics, and culture. Each year, particular problems or issues serve as a focus for lectures and discussions. Students write several essays to integrate class reading, lectures, and discussions. Daily reading of the *New York Times* is required. Fulfills the *historical perspective* requirement.
Mr. Ford/Offered every year

108 WORLD POPULATION/Lecture

Is the population of our world growing too fast? Will overpopulation lead to doomsday? To address these questions requires an understanding of the nature of population growth and sociocultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed.
Mr. Turner, Mr. Johnson/Offered periodically

113 VILLAGES IN THE THIRD WORLD/Lecture, Discussion

The course explores the nature of village life in Asia, Africa, and Latin America. Readings are both anthropological and historical with several novels used to enliven the readings and class discussions.
Mr. Ford/Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/Lecture, Discussion

This course analyzes the concept, the causes, and the process of revolution. The course

explores the distinctions between revolution and other forms of political violence such as terrorism, rebellion, and coups. It also reviews general theories of revolution in order to gain some appreciation of the difficulties, peculiarities, and goals of specific revolutionary movements. The course focuses on the Russian and Chinese revolutions as twentieth-century prototypes; it then draws comparisons to recent revolutions in Eastern Europe, the Middle East ,and Latin America.
Ms. Sochor/Offered every year

120 INTRODUCTION TO SOCIAL ANTHROPOLOGY/Lecture, Discussion
Analysis of human society and culture, especially in the context of development. The epistemological, environmental, and social bases of culture are reviewed to understand the significance of global economic changes and their implications for human cultural diversity. The underlying question addressed is "How can an anthropological perspective inform questions of social change in an interdependent world?" Class materials are drawn from countries in Latin America, the Caribbean, Africa, and the Middle East.
Mr. Jones/Offered every year

125 DEVELOPMENT PROBLEMS/Lecture, Discussion
Introduces students to the major issues and debates in the field of international development, by addressing a variety of concerns including colonialism, development and underdevelopment, the relationship between arms expenditures and development, growth and equity issues, trade, aid, the impact of development processes on women, North-South relations, emergence of class, and political ideologies. The class focuses on specific problems of food, population, and resources. Case materials are drawn from a number of countries including India, China, Kenya, Zimbabwe, Mexico, Brazil, and Bangladesh.
Ms. Thomas-Slayter/Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/Lecture, Discussion
Surveys the leading schools of thought on regional development (environmental determinism, modernization theory, dependency/world systems theory, Marxist theories) and looks at contemporary problems of development (the international role of capital, multinational corporations, and environmental destruction in the Third World).
Mr. Peet/Offered every year

128 FAMILY AND SEX ROLES IN CROSS-CULTURAL PERSPECTIVE; AN ANTHROPOLOGICAL APPROACH/Lecture, Discussion
Examines family organization and gender roles in traditional and modern societies. Topics include family structure; the socialization process for males and females; the changing role of males and females in comparative perspective; the nature and function of kinship systems; the extended family; anthropological and biological views concerning the nature of male and female roles; the functions of the women's liberation movement with respect to child rearing; the changing role of elders within modern industrial states and the role of elders in traditional and primitive societies.
Staff/Offered every year

130 INTRODUCTION TO LATIN AMERICA/Lecture
This course develops an understanding of contemporary Latin America through the consideration of particular social and economic conditions of the region. The role of

the Spanish conquest, the Catholic church, and associated political theories are evaluated. Special attention is given to economic development ideas of the U.N. Economic Commission for Latin America, such as Import Substitution Industrialization, and how they have affected the region. The course also reviews the impact of emerging concerns with the effect of the"informal economy" on Latin American national development.
Mr. Jones/Offered every year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS/Lecture, Discussion
Explores issues and problems confronting sub-Saharan Africa, including the legacy of colonialism, establishment of nation-states, changing production systems, the roles of women in existing economic structures, the emergence of class, strategies for socioeconomic change, and regional conflict particularly in the Horn and Southern Africa. Readings include contemporary literature, public documents, journals and newspapers, and secondary sources. Illustrative material is drawn selectively from East, West, and Southern Africa.
Ms. Thomas-Slayter, Ms. Grier/Offered every other year

139 COUNTRY AND CULTURE/Lecture
The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New England, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter-gatherers to modern suburban encroachment on rural areas. Emphasis is placed on ecological principles that help explain the technocultural modification of rural places.
Mr. Johnson/Offered every other year

147 FOOD, POPULATION AND ENVIRONMENT/Lecture, Discussion
This course reviews how recurrent food crises have inspired a variety of strategies on the part of national governments and international agencies to alleviate world hunger. The role of private voluntary and charitable agencies is considered from both a positive and negative perspective. Are humans caught in an inevitable Malthusian trap? Or are there methods for resolving the problem of food shortages in the world? A variety of explanations for the origins of and solutions to food shortage are reviewed and incorporated into strategies of planning for national food security.
Mr. Ford/Offered every other year

158 THE FRENCH-SPEAKING WORLD/Seminar
An interdisciplinary analysis of the problematic role of the French language and the culture it represents in various parts of the world, with emphasis on Quebec, the Antilles, Algeria, and French-speaking Africa. Through literature, social texts, and film, we explore such issues as bilingual colonialism, the question of *negritude*, the origins and legacy of the Algerian war, and conflicts between traditional and modern social codes. Prerequisite: one third-year level French course, or permission of instructor.
Ms. Kaufmann/Offered every other year

169 INTRODUCTION TO INTERNATIONAL RELATIONS/Lecture, Discussion
Refer to course description under Government 169.
Mr. Vogele/Offered every year

170 ECOLOGY AND ECONOMY OF THIRD WORLD SOCIETIES

Economies are embedded in the lifeways, histories, and environments of human populations. This course explores anthropological contributions to holistic studies of past and contemporary socioeconomic systems as varied as the !Kung of Southern Africa, the Ayta of the Philippines, the Quechua and Aymara of Peru and Bolivia, the Maya of Guatemala, and rural Bangladeshi. Several topics are explored, including human adaptation, resource management systems, the division of labor by age and gender, market and other exchange systems, the informal economy, and relations between small-scale economies and the world economy. Special attention is given to the ways different socioeconomic systems structure constraints and opportunities for various social groups, and the economic, political and environmental implications of social roles. Some previous study of anthropology, sociology, international development, geography, or social history is recommended.

Staff/Offered every year

175 CULTURAL ECOLOGY IN ARID LANDS/Lecture, Discussion

Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.

Mr. Johnson/Offered periodically

176 COMPARATIVE ECONOMIC SYSTEMS/Lecture

Examines the theory and practice of selective cases of capitalism, market socialism, and centrally planned socialism. Major topics include the welfare state and industrial democracy of Sweden, industrial policy and corporate groupings in Japan, workers' self-management in Yugoslavia, problems of centrally planned socialism, and the dilemmas of socialist reforms in Hungary and the Soviet Union.

Mr. Hsu/Offered every year

177 JAPANESE AND CHINESE ECONOMIES/Lecture

A comprehensive survey of the Chinese and Japanese economies–their development, institutions, and policies. Topics include historical background, agricultural development, industrial organization and development, fiscal and monetary policies, employment and labor, Sino-Japanese relations, and relations with the U.S.

Mr. Hsu/Offered every other year

178 POLITICS AND HISTORY OF SOUTH AFRICA/Lecture, Discussion

The aim of the course is to acquaint students with the forces that have shaped the political system in South Africa today. The structure of the economy (mining, agriculture, and industry) is examined with particular attention paid to the role of black labor. The rise and consolidation of Afrikaner nationalism, the introduction and implementation of apartheid, the struggle of blacks against apartheid and growing rural and urban poverty, and South Africa's policy toward neighboring African countries are among the topics discussed. The economic and political role played by American investment in South Africa is explored, as is official U.S. policy toward the country.

Ms. Grier/Offered every year

179 THE HISTORY OF TRADITIONAL AFRICA/Lecture, Discussion
An introduction to the history of Africa south of the Sahara. The course begins with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Zanj, Congo, and Zimbabwe, and continues through to the arrival of Europeans. Attention is given to eastern, western, and southern Africa. The approach is largely historical and anthropological. Fulfills the the historical perspective requirement.
Staff/Offered every other year

180 HISTORY OF MODERN AFRICA/Lecture, Discussion
Introduces students to the major themes of modern African history. Begins with an orientation to precolonial Africa and then considers four main periods: (1) the imperial years, (2) the struggle for independence, (3) the 1960s as a decade of independence, (4) the 1970s and 1980s as a search for identity and development. Focus is primarily on the years since 1945. Fulfills the historical perspective requirement.
Staff/Offered every other year

182 POLITICS, PEOPLE, AND POLLUTION/Lecture, Discussion
Environmental problems and issues arise from economic development processes in both industrialized and developing countries. What are the facts and what are the myths in a consideration of environment and development? How do we establish policies for dealing with these problems? What are the processes by which governments make decisions addressing complex environmental/development issues here and in distant parts of the world? This course offers students an opportunity to examine the relations between environment and development in the context of developing and industrialized societies.
Ms. Thomas-Slayter, Mr. Schwarz/Offered periodically

183 MODERN CHINA/Lecture, Discussion
Introduces students to events, personalities, and concepts of particular importance for understanding China's history from the early nineteenth century to the present. Readings that present the Chinese view of events are used to supplement interpretative studies by Western scholars. Fulfills the *historical perspective* requirement.
Mr. Ropp/Offered every other year

189 REMOTE SENSING OF THE ENVIRONMENT/Lecture, Laboratory
Offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. It covers the use of remotely sensed data such as air photos and a variety of satellite imagery to provide answers to many of the problems about our physical and human environment.
Mr. Steward/Offered every year

207 POLITICS OF DEVELOPMENT: CENTRAL AMERICA AND SOUTHERN AFRICA/Lecture, Discussion
The course examines the theoretical debates surrounding concepts such as development, modernization, underdevelopment, and dependency. It looks in some detail at the politics of development in two countries: one in Central America and one in Southern Africa. The roles of political parties, the bureaucracy, the military, the extremes of wealth and poverty, gender, and the impact of global economic and political forces on these countries are examined.
Ms. Grier/Offered every year

211 GEOMORPHOLOGY OF HUMID TROPICS/Lecture, Discussion
The humid tropics–home of rainforest, dry forest, and savanna–are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, and the devastating impact of human intervention are among the topics explored.
Prerequisite: Geography 114, or permission of the instructor.
Mr. Lewis/Offered every other year

212 WOMEN AND SOCIAL CHANGE/Seminar
Examines the central assumptions and theories about the status and roles of women from multidisciplinary, cross-national, and cross-cultural perspectives, emphasizing the Third World. Explores issues pertaining to the division of labor between the sexes; relationships among class, gender, and ethnicity; the household economy; women's roles in economic development; the impact of social policies on women's lives; the internationalization of capital and women's work; and women in politics and political organizations. Materials focus on women's experience in Africa, Asia, and Latin America.
Ms. Thomas-Slayter/Offered every year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT/Seminar, Discussion
The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies. Permission of instructor is required.
Mr. Lewis/Offered every other year

225 BLACK POLITICS IN THE UNITED STATES/Lecture, Discussion
Refer to course description under Government 224.
Ms. Grier/Offered every other year

228 ECONOMIC DEVELOPMENT/Lecture
Examines the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and investment, population, labor, and employment.
Mr. Hsu/Offered every other year

229 MANAGEMENT OF ARID LANDS/Lecture, Seminar
The drylands of the world present special development problems. Particularly prone to degradation, these regions face the difficult task of providing support to a rapidly growing population. Viewed in a historical perspective, the demography, behavioral characteristics, social and livelihood systems, and physical constraints of dryland ecosystems are analyzed. Special attention is paid to evaluating the management strategies currently employed in their use, identifying the obstacles constraining their growth, and assessing their future development potential.
Mr. Johnson/Offered every other year

232 SOCIAL JUSTICE AND DEVELOPMENT/Seminar
The course explores the linkage between development and social justice, why

development is impossible without social justice and vice versa. It starts with the discussion of human rights and then examines and clarifies the ideas on fundamental rights in Liberalism, Marxism/Socialism, and Islam. These insights are brought to bear on understanding the concrete processes and problems of development in a number of countries identified with the three traditions.
Mr. Nawawi/Offered periodically

233 HEALTH AND DISEASE IN THE AMERICAN HABITAT/Lecture, Discussion

A synoptic view of concepts and practices concerning health and disease, based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health. Emphasis on societal interactions with disease environments during the last hundred years and their intellectual consequences. Not open to first-year students.
Mr. Koelsch/Offered every other year

234 LAND AND DEVELOPMENT IN LATIN AMERICA/Lecture, Discussion

The appropriation and inclusion of Latin American lands in the larger world economy have been an object of policy and debate since the Spanish conquest. Contemporary elements of this process are reviewed, beginning with efforts at agrarian reform and their social, political, and economic significance. The incorporation of peripheral lands of the American tropics are investigated for their impacts on native populations, and finally on the global environment. Special emphasis is given to the policy context of land and development, as well as efforts to change patterns of land appropriation and inclusion for social and environmental ends.
Mr. Jones/Offered every year

236 INTERNATIONAL AND COMPARATIVE RESOURCE POLICIES/Lecture, Seminar

Deals with international and comparative law/policy of water resources, fisheries, land, oceans and seas, wildlife, air, and nuclear power. Within the context of each of these topical areas, the course objectives are to define the "resource problem(s)," analyze existing institutions (i.e., property rights, management systems, and allocation regimes) and their responses to the problems, and consider conceptual guidelines for improving institutional arrangements and individual actions.
Ms. Emel/Offered every other year

242 POLITICS OF DEVELOPMENT/Seminar

The course examines the relationship between political development and socioeconomic development. Development being essentially the expansion of the participation of the vast majority of the population, the course first clarifies the concept of political participation, focusing on the development of interdependence between the elite and the majority of the populace. The course then relates political participation to the problems and requirements of increasing economic productivity and social welfare. Much of the discussion is in light of the experiences of selected Third World countries.
Mr. Nawawi/Offered periodically

244 CONTEMPORARY AFRICAN POLITICS/Seminar

An examination of post-independence African politics from a comparative politics perspective. Theoretical approaches used include underdevelopment or dependency theory, modernization theory, and neo-Machiavellian (personal rule) theory. Topics to be considered are: problems of governance, political stability, and democratization;

economic development, poverty, and disasters; and apartheid and minority rule in South Africa. Through an analysis of several selected African countries, the course discusses implications of contemporary African politics for Africa's future.
Mr. Adam/Offered periodically

250 PATTERNS OF ASIAN DEVELOPMENT/Seminar
The course aims at understanding the central problem of development, identified as the enhancement of the capabilities and participation of the overwhelming majority of the populace. It focuses in particular on the relationships among productivity, resource mobilization, and participation. In doing so, it examines the family and social structure, land tenure, system of taxation, pattern of conflict and cooperation, industrialization and urbanization, and structure of public administration and government in Japan, China, India, and Indonesia.
Mr. Nawawi/Offered periodically

251 NON-GOVERNMENT ORGANIZATIONS: CATALYSTS FOR DEVELOPMENT/ Seminar
Many practitioners and theoreticians, disillusioned with the role of governments in the development process, have called for building nongovernment organizations (NGOs) as development catalysts. This seminar gives participants an opportunity to explore this proposal in light of the difficulties as well as progress various NGOs have experienced. Participants are encouraged to examine evidence related to NGOs with which they have worked.
Ms. Seidman/Offered periodically

256 PROBLEMS IN WATER RESOURCES PLANNING/Problems course
Water resources planning techniques; water resources engineering; and economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment; physical geography; economics; environment, technology, and society; or permission of instructor.
Mr. Schwarz/Offered periodically

257 THEORY OF MULTI-OBJECTIVE RESOURCE EVALUATION/Lecture
Introduction to the theory of multi-objective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.
Mr. Ratick/Offered periodically

258 DEVELOPMENT AND REGIONAL INTEGRATION/Seminar
Most theorists agree that developing countries should integrate their economies to take advantage of the economies of scale required for large scale basic industries. Nevertheless, efforts to attain effective regional integration have proved difficult. This seminar explores available evidence relating to the alternative explanations and the solutions attempted to surmount those difficulties in order to propose and implement more effective regional integration schemes.
Ms. Seidman/Offered periodically

261 GIS APPLICATIONS FOR ENVIRONMENTAL MANAGEMENT/Seminar

The course objective is to introduce students to the application of Geographic Information Systems (GIS) to environmental management problems in developing countries and in the United States. While no formal GIS training is required, there are involved in laboratory work in data input and analysis according to the abilities of each student, meetings with environmental activists outside the university and field reconnaissances for background information.
Mr. Jones/Offered every year

263 STATE, LAW AND DEVELOPMENT/Seminar

Post-colonial optimism has given way to widespread disillusionment with developing country governments' capacity to attain democratic sustainable development. This seminar provides students an opportunity to research and assess evidence as to alternative theoretical explanations offered for their dismal record as a basis for improving the future role of the state in the development process. Students work alone or in groups to examine as case studies countries of their choice.
Ms. Seidman/Offered periodically

265 MONEY, BANKING, AND PUBLIC FINANCE IN DEVELOPING COUNTRIES/ Seminar

Explores the consequences of alternative approaches to domestic and international banking and financial institutions and the role of government in development finance in Third World countries.
Ms. Seidman/Offered periodically

270 ETHNIC AND SOCIAL DIFFERENTIATION

Planned and market-led development are not socioeconomically and politically neutral. Development does not equally benefit all people of socioeconomic systems; rather, it benefits some socially constructed groups often at the expense of other groups. This course examines the potential and real consequences of development interventions and market developments on populations stratified on the basis of social class, ethnicity, gender, race, and other forms of differentiation and inequality. It explores the historical and material bases of increasing social differentiation and the social dynamics of resource competition, environmental degradation, and sustainability of lifeways and livelihoods in changing socioeconomic and political environments. To gain insight into these issues, it draws on recent anthropological and sociological contributions to studies of processes of differentiation, inequality, and development for sociocultural groups of third and first world nations.
Staff/Offered every year

272 INTERNATIONAL DIVISION OF LABOR/Seminar

As a result of the post-World War II revolution in technologies affecting transportation and communications, analysis of Third World development requires an understanding of the consequences of the increasingly interrelated features of the global political economy. This course focuses on the role of transnational corporations and financial institutions in changing the international division of labor. The course examines how this change affects living standards, conditions of work, and incomes of workers in agriculture and industry in both developed and developing countries. Alone or in groups, students are expected to develop a term project assessing the way the changing international division of labor has affected development in a specific

country or region of their choice.
Ms. Seidman/Offered periodically

275 POLICIES, PROJECTS, AND STRTEGIES FOR CHANGE: A FOCUS ON GENDER/Seminar
Explores gender as a key variable in determining roles, responsibilities, rights, and opportunities in "developing countries." It considers various methodologies of gender analysis for their relevance to national policies and programs and their usefulness to the design, implementation, monitoring, and evaluation of projects. It focuses on community institutions and organizations and their potential roles in alleviating poverty and fostering sustainable development.
Ms. Thomas-Slayter/Offered every year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/Lecture, Seminar
A mystique exists about the humid tropics. Midlatitude biases have led to inaccurate assessments of the composition of these wet, hot lands; of traditional uses of them; and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region.
Mr. Turner, Ms. Rocheleau/Offered periodically

277 GENDER, RESOURCES, AND DEVELOPMENT/Seminar
Considers the gender division of control, responsibility, knowledge, labor, and benefits in the management of natural resources in developing countries. Readings, lectures, and discussion focus on the perspectives and potential of rural women in Africa, Latin America, and Asia as major actors in natural resource use and management and in local, regional, and global ecological transformations.
Ms. Rocheleau/Offered every other year

278 DEVELOPMENT AND APPLIED ANTHROPOLOGY/Seminar
Explores the inherent contradiction between economic development and anthropology, the persistence of diverse cultures within an increasingly homogeneous and pervasive world society. The importance of Indigenous Knowledge Systems is explored, both for their contemporary impacts and their future contribution to a sustainable world economy. A variety of traditional systems may be considered, including medicine, agriculture, and environmental management. Strategies for "cultural survival" are introduced as models of anthropological practice.
Mr. Jones/Offered every year

281 THE PEOPLE'S REPUBLIC OF CHINA/Lecture, Discussion
A general survey of life in the People's Republic of China from 1949 to the present. Includes a general history of the People's Republic, and special attention to such themes as politics, society, family life, economics, foreign relations, literature, and the arts.
Mr. Ropp/Offered every other year

282 CHINESE WOMEN IN LITERATURE AND SOCIETY/Lecture, Discussion
Examines the changing role of women in Chinese society from the seventeenth century to the present, primarily through the reading and discussion of Chinese literature in English translation.
Mr. Ropp/Offered every other year

284 LANDSCAPES OF THE MIDDLE EAST/Lecture, Seminar

A diverse array of landscapes, economies, and cultures make up the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analysis.
Mr. Johnson/Offered every other year

287 POLITICS AND POWER IN THIRD WORLD SOCIETIES

The seminar examines the evolving nation-state in the Third World. It explores connections between colonialism and Third World political patterns, the interaction between politics and internal economic and social forces, as well as the political impact of various ideologies. Issues of peasant-state relations, local level organizations, and participation through "traditional" and "modern" associations are investigated. Specific groups—the landless; the urban poor; women; and particular ethnic, religious, clan, or caste groups—are analyzed in regard to who participates and who gets left out. Examines patron-client relations, political parties, self-help associations, and peasant mass movements for their roles in the process of socio-economic and political change. The course is organized around specific cases from Africa, Asia, and Central America.
Ms. Thomas-Slayter/Offered every other year

288 DISEASE AND HEALTH SERVICES IN THE THIRD WORLD/Seminar

This seminar examines epidemiology and geographic distribution of health problems in developing countries. The health systems created to address these problems also are studied in depth, including their effectiveness, costs, services utilized, and resources employed.
Staff//Offered periodically

289 PROBLEMS IN POLITICAL ECONOMY OF DEVELOPMENT/Seminar

This course gives background material on development in the Third World. Class members then outline a policy framework for the development of an impoverished Third World region, usually Southern Africa.
Mr. Peet/Offered every year

290 DEVELOPMENT PROGRAMS AND PROJECT MANAGEMENT/Seminar

Explores relationships between development theory and project implementation as well as issues of program and project management. Topics include project design, implementation, management, budget monitoring, scheduling, and evaluation. Students focus on problem identification, develop project proposals, design environmental and social impact assessments, and create evaluation frameworks. Case studies are used extensively.
Mr. Ford, Ms. Thomas-Slayter/Offered every year

293 OVERCOMING WORLD HUNGER—AGRICULTURAL RESEARCH AND INTERNATIONAL DEVELOPMENT/Seminar

This course reviews the achievements, shortcomings, and prospects for agricultural research in resolving problems of production in developing countries. Agricultural research over the past several decades has been characterized by significant technological breakthroughs and improvements, and at the same time by widespread policy breakdowns in the use of technological improvements. The identification of successes and failures in the agricultural development process triggered responses,

both within international agricultural research centers and academic institutions in the developed world. This course treats the changes of the past decades, and especially focuses on strategies such as farming systems research, which attempt to introduce social considerations into agricultural research.
Mr. Jones/Offered periodically

295 AGRICULTURE IN THIRD WORLD ECONOMIES/Lecture
Consumption and commodity agriculture in the non-Western world is explored. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on theories of agricultural change.
Mr. Turner/Offered periodically

297 ENVIRONMENTAL MANAGEMENT FOR INTERNATIONAL DEVELOPMENT/ Lecture, Discussion
An understanding of environmental management for development begins with a critical examination of the policies and methods of international donors and other development organizations responsible for aiding the environment. To complete this understanding, examples of local resource user systems are investigated to evaluate how the practices of individual managers in the Third World–farmers, herders, fishermen, etc.–are brought to bear on the environment.
Staff/Offered periodically

299.1 READINGS IN INTERNATIONAL DEVELOPMENT/Discussion
Variable credit and topics relevant to issues of international development.
Staff/Offered every year

299.2 RESEARCH IN INTERNATIONAL DEVELOPMENT
Variable credit, differing topics, may be associated with international development research projects.
Staff/Offered every year

302 THESIS RESEARCH
Master's degree candidates may register for thesis research while working on research for their master's degree thesis.
Staff/Offered every year

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY/Seminar
Designed for thesis- and dissertation-level students working in the areas of resources, development, ethno-ecology, social theory, and political economy in developing countries, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice. Places strong emphasis on ethnographic approaches and qualitative field methods. Prerequisite: 314 or permission of instructor. Meets graduate skills requirement in Geography and International Development.
Ms. Rocheleau/Offered every other year

314 RESEARCH DESIGN AND METHODS/Seminar
Covers all the major topics in research design and methodology: e.g., problem definition, research strategies, measurement, sampling, and data collection techniques and procedures.
Mr. Mitchell/Offered every year

330 SEMINAR IN CULTURAL ECOLOGY/Seminar

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology. Prerequisite: Geography 177 or equivalent.
Mr. Johnson, Mr. Turner/Offered periodically

336 HOUSEHOLD ECONOMIC BEHAVIOR AND THE GEOGRAPHY OF DEVELOPMENT/Graduate Seminar

Explores the nature and role of the household as a socioeconomic organization and primary decision-making unit in developing countries. Key issues relate to semisubsistence farm households, migration, urban-rural linkages, gender and age divisions of labor, women farmers, and cash crop versus food crop. Decision-making theory and the economics of household production are studied as a basis for household-level research on resource management.
Staff/Offered periodically

350 INTERNSHIP/FIELD WORK

Graduate students in international development may elect to undertake field work over and above the 8 credits required for fulfillment of the master's degree. Internship is normally overseas for purposes of research related to the thesis.
Staff/Offered every semester

351 SEMINAR IN RESOURCE GEOGRAPHY: THEORY AND METHOD/Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.
Ms. Emel/Offered every other year

357 APPROACHES TO REGIONAL DEVELOPMENT PLANNING/Seminar

This graduate seminar is intended to provide an understanding of the issues encountered in development intervention: growth and equity; sectoral emphasis; spatial distribution; and relations between classes, regions, states, and natural resources. Through a review of the literature on development economics, political economy, growth models, spatial analysis, modernization theories, and rural-urban dynamics, this course focuses on concepts of the region as the unit for development planning and intervention.
Mr. Karaska/Offered every year

360 DEVELOPMENT THEORIES AND PHILOSOPHIES OF CHANGE/Seminar

A graduate seminar that examines development theory relating theory, issues, and practice with an emphasis on the evolution of ideas and the search for alternative approaches to development interventions.
Ms. Seidman, Staff/Offered every year

370 ANIMAL AGRICULTURE/Lecture, Discussion

Animals and humans have a long history of close association. First as hunters and then as domesticators, humans have relied on animals for food, fiber, labor, and companionship. The ecology of many diseases also links people to the animals that they exploit. Today animals play an increasingly important role in efforts to increase food production and to improve diet quality in support of a growing human population. Both terrestrial and aquatic animal systems, and the theory and practice

of their intensified exploitation, are examined in this seminar.
Mr. Johnson/Offered every other year

395 ECONOMIC DEVELOPMENT AND POLICY ANALYSIS/Seminar
This course reviews alternative approaches to planning for development in the Third World, ranging from that proposed by the World Bank and IMF to that suggested by a socialist perspective. It explores the issues relating to institutional change required to implement alternative kinds of plans in industry, agriculture, trade, and finance. Students are expected (alone or working in groups) to develop a term project critiquing the formulation and implementation of development plans in any developing country they select.
Ms. Seidman/Offered periodically

For additional courses related to international development, refer to the following History Department listings:

020 AMERICA AND THE WORLD/Lecture, Discussion
Refer to course description under History 020.
Mr. Little/Offered every year

177 LATIN AMERICAN HISTORY SINCE 1825/Lecture, Discussion
Refer to course description under History 177.
Mr. Little/Offered periodically

181 TRADITIONAL CHINA/Lecture, Discussion
Refer to course description under History 181.
Mr. Ropp/Offered every other year

184 MODERN JAPAN: /Lecture
Refer to course description under History 184.
Mr. Tanaka/Offered every other year

291 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/Seminar
Refer to course description under History 291.
Mr. Little/Offered every year

International Relations

PARTICIPATING FACULTY

Douglas Little, Ph.D., *program director*: U.S. foreign policy, modern Latin America
Daniel Borg, Ph.D.: modern Europe
Cynthia Enloe, Ph.D.: modern Asia, militarization
Beverly Grier, Ph.D.: modern Africa
Robert Hsu, Ph.D.: international economics, economic development
George Lane, M.A.: U.S. foreign policy, modern Middle East

Paul Lucas, Ph.D.: early modern Europe

Ronald Richardson, Ph.D.: modern Europe, British Empire

Paul Ropp, Ph.D.: modern Asia, China

Robert Ross, Ph.D.: international political economy, urban studies

Zenovia Sochor, Ph.D.: Soviet Union, comparative foreign policy

Stefan Tanaka, Ph.D.: modern Asia, Japan, intercultural relations

Roger Van Tassel, Ph.D.: international economics

Robert Vitalis, Ph.D.: international relations, Middle East politics

INTERNATIONAL RELATIONS CONCENTRATION

Clark's International Relations Program constitutes neither a department nor a major, but rather a concentration within two existing majors: history and government. Recent developments in world affairs have broken down the old disciplinary boundaries between diplomatic history and international relations, making an interdisciplinary approach essential. The international relations concentration consists of a series of seven interrelated courses, designed to provide an integrated framework for understanding international affairs from historical, political, and economic perspectives.

Requirements

A. A student wishing to pursue a concentration in international relations must take a *core cluster* consisting of three courses.

Core cluster

1. Economics 108, *International Financial Developments*
2. Government 169/History 169, *Introduction to International Relations*
3. History 238, *U.S. Foreign Relations since 1914*

B. In addition, international relations concentrators must choose one of the following *analytic clusters*: World Economics, Comparative Diplomacy, or Self-Designed Area Studies.

International Political Economy Cluster (choose three of the following six courses):

1. History 125, *Development Problems*
2. Economics 242, *European Economic History*
3. Economics 176, *Comparative Economic Systems*
4. Geography 227, *Geography of the Third World*
5. Government 145, *America and the Changing World Economy*
6. Sociology 257, *Cities in Global Perspective*

Comparative Diplomacy Cluster (choose three of the following seven courses):

1. History 090, *Twentieth-Century Global History*
2. Government 179, *Comparative Foreign Policy*
3. Government 245, *U.S. Foreign Policy—Middle East*
4. History 253, *Twentieth-Century Europe*
5. History 255, *Twentieth-Century Global Relations*
6. Government 280, *Soviet Foreign Policy and Its Aftermath*
7. Government 237, *Arab State System*

Self-Designed Area Studies Cluster (three courses):

Students wishing to concentrate on a particular region may select a set of three interrelated courses as their analytic cluster. For example, someone concentrating on modern Asia might choose Economics 177, *Chinese and Japanese Economies*; History 182, *Modern China*; and Government 236, *Politics of Philippines and Vietnam.*

C. Finally, international relations students must take a capstone seminar related to their analytic cluster. Examples of suitable capstone seminars include Government 389 and History 291, *Advanced Topics in International Relations*; History 288, *The Atomic Bomb.*

D. International relations students must also fulfill the other existing requirements of their respective majors. International relations students should also note that Economics 10, *Issues and Perspectives*, is a prerequisite for all 100-level economics courses.

Italian

See Department of Foreign Languages and Literatures.

Jewish Studies

PARTICIPATING FACULTY

Everett Fox, Ph.D., *program director*: Hebrew Bible, Midrash, Jewish ritual and folklore, classical Jewish thought

Shulamith Bitran, M.A.: Biblical Studies and Jewish history

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology, ancient history, religion in antiquity

Shelly Tenenbaum, Ph.D.: sociology of American Jewry, race/ethnicity, Holocaust studies

COURSES

The Jewish Studies Program is neither a department nor a major, but rather a concentration that allows students majoring in any discipline to pursue extensive course work in Jewish studies. The following courses in Jewish studies are offered in the history, sociology, and foreign languages and literatures departments. For course descriptions, refer to the course listings under those departments. For further information concerning the Jewish Studies Program, to discuss the possibility of integrating Jewish studies courses within various departmental majors, or to develop a concentration or self-designed major in Judaica, contact Mr. Fox.

HEBREW LANGUAGE AND LITERATURE COURSES

(See also Department of Foreign Languages and Literatures.)

101-102 ELEMENTARY HEBREW/Lecture, Discussion
Refer to course description under Hebrew 101-102.
Ms. Bitran/Offered every year

103 INTERMEDIATE HEBREW/Lecture, Discussion
Refer to course description under Hebrew 103.
Ms. Bitran/Offered every year

104 INTERMEDIATE/ADVANCED HEBREW/Lecture, Discussion
Refer to course description under Hebrew 104.
Ms. Bitran/Offered every year

299.6 SPECIAL TOPICS IN HEBREW
Refer to course description under Hebrew 299.6.

HEBREW LITERATURE/JEWISH STUDIES COURSES CONDUCTED IN ENGLISH

117 INTRODUCTION TO THE HEBREW BIBLE I: NARRATIVE AND LAW/Lecture, Discussion
Refer to course description under Hebrew 117.
Mr. Fox/Offered every year

118 INTRODUCTION TO THE HEBREW BIBLE II: PROPHECY AND POETRY/Lecture, Discussion
Refer to course description under Hebrew 118.
Mr. Fox/Offered every year

121 LAWS AND LEGENDS, MAXIMS AND MYSTICAL TALES/Lecture, Discussion
Refer to course description under Hebrew 121.
Mr. Fox/Offered every other year

122 WORKSHOP IN JUDAISM: SACRED TIME AND THE LIFE CYCLE/Lecture, Discussion
Refer to course description under Hebrew 122.
Mr. Fox/Offered every other year

123 THE MIDRASHIC TRADITION/Lecture, Discussion
Refer to course description under Hebrew 123.
Mr. Fox/Offered every other year

130 SUFFERING AND EVIL IN JEWISH TRADITION/Lecture, Discussion
Refer to course description under Hebrew 130.
Mr. Fox/Offered every other year

HISTORY COURSES

174 THE JEWISH EXPERIENCE/Lecture, Discussion
Refer to course description under History 174.
Staff/Offered every year

276 MODERN JEWISH HISTORY AND THOUGHT/Lecture, Discussion
Refer to course description under History 276.
Staff/Offered every other year

CLASSICS COURSES

123 THE MIDRASHIC TRADITION/Lecture, Discussion
Refer to course description under Hebrew 123.
Mr. Fox/Offered every other year

262 JEWS AND CHRISTIANS IN THE ANCIENT WORLD/Lecture, Discussion
Refer to course description under Classics 262.
Mr. Burke/Offered every other year

SOCIOLOGY COURSES

203 AMERICAN JEWISH LIFE/Variable Format
Refer to course description under Sociology 203.
Ms. Tenenbaum/Offered every year

204 THE HOLOCAUST: A STUDY OF GENOCIDE/Variable Format
Refer to course description under Sociology 204.
Ms. Tenenbaum/Offered every year

Management

FACULTY

Robert A. Ullrich, D.B.A., *dean*: motivation, organizational theory and design, employment, robotics, behavioral decision research

Royce Anderson, Ph.D.: marketing, consumer behavior, marketing research, marketing ethics

Margarete Arndt, D.B.A.: management of health care organizations, strategic planning, practice patterns

Subramanian Balachander, Ph.D.: marketing management, product management, pricing, distribution channels, marketing research

Barbara Bigelow, Ph.D.: organizational decision making, strategic management,

management of health care facilities, corporate political strategy

Robert C. Bradbury, Ph.D.: health systems analysis, hospital quality and cost control, health care competition, health policy, health care strategic planning, health promotion and disease prevention

Gary N. Chaison, Ph.D.: union mergers; union structure, government and growth; comparative U.S./Canadian industrial relations; human resource management, collective bargaining

Carolyn E. Cotsonas, J.D.: health law, ethical problems facing health care providers, family practice management

Dileep G. Dhavale, Ph.D., C.P.A., C.P.I.M.: financial and managerial accounting, operations management, management science

Priscilla Elsass, M.B.A.: organizational behavior, organizational theory, work stress, motivation, career dynamics

Joseph H. Golec, Ph.D.: finance, industrial organization, public policy and regulation, money and banking, econometrics, macroeconomics, determinants of incentive compensation contracts for investment advisers and their impact on performance and risk taking

Laura M. Graves, Ph.D.: organizational behavior, organizational theory, principles of management, human resource management, compensation, recruitment and selection, leadership theory

Jane Kapral, M.S., C.P.A.: financial accounting, managerial accounting

Harold T. Moody, Ph.D.: market price structures and strategies; pricing services in profit, nonprofit, and governmental organizations; marketing implications of customer and client waiting periods (queue disciplines, queue environments, and consumer behavior patterns)

Edward J. Ottensmeyer, Ph.D.: strategic issue management, management of technology and innovation, strategy development in the nonprofit sector, business/government relations

R. P. Sundarraj, Ph.D.: management information systems, production management, operations management

Maurry Tamarkin, Ph.D.: portfolio analysis, capital investment, investor behavior

Daniel A. Verreault, Ph.D., C.P.A.: accounting information systems, auditing, managerial accounting, cost accounting

Jue Xue, Ph.D.: operations research, management science, inventory control, network optimization, sequencing and scheduling

ADJUNCT FACULTY

Gary E. Overvold, Ph.D.: corporate social responsibility, philosophy of social change

AFFILIATE FACULTY

Arthur Gerstenfeld, Ph.D.: advanced automation technology, new venture management, entrepreneurship

W. Mack Hill, Ph.D.: statistics, calculus, discrete mathematics, actuarial mathematics

Gale L. Kelly, Ph.D.: health politics, health policy

John T. O'Connor, Ph.D.: medical economics, federal and state health policy

Robert J. Perry, Ph.D.: calculus, algebra, linear algebra, geometry

Pamela D. Sherer, Ph.D.: organization behavior, organization theory, human resource management

PART-TIME FACULTY

Rockie Blunt, M.A.: managerial communications, presentation skills

Christina Coles, Ph.D.: international management, international marketing, economics

Edson D. de Castro, B.S.: new venture management

Richard D. Fiorentino, M.B.A.: marketing, sales, marketing development

Donald E. Fries, LL.M.: business law, legal aspects of management

Murray Hershman, J.D.: taxation, corporate tax planning, business law

Robert E. Maher, Jr., M.H.A.: ambulatory care administration

Thomas P. Millott, J.D.: business law, real estate law, environmental law

Alan M. Stoll, M.P.A.: ambulatory care administration, health maintenance organizations

UNDERGRADUATE PROGRAMS IN MANAGEMENT

The Graduate School of Management offers two programs for undergraduates: the undergraduate major and the five-year B.A./M.B.A. program. Program descriptions follow. Interested students should contact the assistant dean for academic affairs in the Graduate School of Management. Students wishing additional information on the M.B.A. program should refer to the Graduate School of Management catalog.

FIVE-YEAR B.A./M.B.A. PROGRAM

The Graduate School of Management offers undergraduate students the option of participating in a five-year program, in which they can earn a B.A. in their major, as well as the M.B.A. degree. Major features of the program are:

1. an undergraduate major in any of the liberal arts disciplines at the University. Management is not an acceptable major for this program.
2. graduate courses, beginning in the senior year, which lead to the M.B.A. degree and help students prepare for management positions in business, government, and nonprofit organizations.

The five-year program is designed to meet several needs expressed by students today. It provides a well-rounded education by combining an undergraduate liberal arts education with a master's degree in business administration and reduces the total time for earning both degrees to five years.

The Program Courses

The five-year B.A./M.B.A. program involves four sets of learning experiences:

1. courses in departments such as economics and mathematics, which provide the tools needed for graduate study in management;
2. the possibility of spending the junior year abroad;
3. graduate management courses taken in the senior year;
4. completion of the M.B.A. program during the fifth year.

Student Advising and Entrance into the Program

Students should plan their undergraduate courses carefully in order to complete the requirements for both their major and the M.B.A. program in the time available. The management school's assistant dean for academic affairs is available to advise students interested in the five-year B.A./M.B.A. program.

Admission to the program occurs after the sophomore year, but before the beginning of the senior year. Interested students are required to apply to the Graduate School of Management for admission to the B.A./M.B.A. program. As part of the application process, students are required to submit transcripts of undergraduate academic work and to take the Graduate Management Admission Test (GMAT).

Work Experience

B.A./M.B.A. students are encouraged to participate in internships, summer jobs, or other experiences that can provide exposure to management issues and environments. The exposure can improve a student's appreciation of M.B.A. courses and can enhance his or her credentials and qualifications for job placement upon graduation from the M.B.A. program.

FIVE-YEAR B.A./M.B.A. PROGRAM

Freshman Year/Sophomore Year

ECON 010	*Issues and Perspectives*
ECON 011	*Principles of Economics*
ECON 160	*Introduction to Statistical Analysis*
or	
PSYC 105	*Quantitative Methods*
MATH 110	*Functions and Calculus I*
or	
MATH 120	*Calculus I*

Junior Year

Apply to M.B.A. portion of the program

Senior Year

Complete B.A. requirements (in major other than management)

MBA 301	*Foundations of Accounting*
MBA 304	*Introduction to MIS*
MBA 310	*Organization Behavior*
MBA 330	*Marketing Management*
MBA 340	*Financial Management*
MBA 350	*Operations Management*

Fifth Year

MBA 360	*Business Policy*
MBA 362	*Business in Society*

Eight electives in M.B.A. Program

UNDERGRADUATE MAJOR IN MANAGEMENT

Students interested in pursuing careers in management immediately after graduation should consider management as an undergraduate major. The management major draws on a variety of disciplines, providing a program that is both practical and broadly educational. Required and optional courses include offerings from a number of academic departments.

Both the undergraduate management major and the M.B.A. program are accredited by the American Assembly of Collegiate Schools of Business. In order to be in compliance with AACSB guidelines, undergraduate management majors may take no more than twelve (and nonmanagement majors no more than eight) courses with a management designation.

The required curriculum for management majors consists of the prerequisite courses taken during the freshman and sophomore years and the required courses taken during the junior and senior years. A 2.0 cumulative grade point average in the prerequisite courses is required for credit toward the major. Management at Clark offers students a vocational emphasis by providing the necessary prerequisites for job placement with a bachelor's degree. Students interested in graduate study toward an M.B.A. degree are encouraged to major in an area other than management and to consider the five-year B.A./M.B.A. program.

REQUIREMENTS FOR MANAGEMENT MAJORS

Prerequisite Courses:

Freshman/Sophomore Years

MATH 110	*Functions and Calculus I*
or	
MATH 120	*Calculus I*
ECON 010	*Issues and Perspectives*
ECON 011	*Principles of Economics*
ECON 160	*Introduction to Statistical Analysis*
MGMT 101	*Principles of Accounting*
MGMT 104	*Introduction to MIS*
MGMT 278	*Business Law*

Required Courses:

Junior Year–Fall

MGMT 203 *Managerial Accounting*
MGMT 210 *Management and Behavioral Principles*
MGMT 230 *Marketing Management*

Junior Year–Spring

MGMT 240 *Corporate Finance*
MGMT 250 *Operations Management*

Senior Year–Fall

MGMT 262 *Business Ethics*
MGMT ___ *Management Elective*

Senior Year–Spring

MGMT 260 *Business Policy*
MGMT ___ *Management Elective*

COURSES

101 PRINCIPLES OF ACCOUNTING/Lecture, Discussion

Elements of generally accepted accounting procedures are presented for several major types of institutions, such as business, government, education, and health.
Staff/Offered every year

104 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS/Lecture, Discussion

The objective of this course is to provide basic knowledge of the field of information systems. Topics include information and organization, database management, recent developments in computer technology and their effect on management, and information systems design and management.
Staff/Offered every year

203 MANAGERIAL ACCOUNTING/Lecture, Discussion
This advanced course emphasizes accounting from the management perspective. Students learn principles of managerial decision making using accounting information. Prerequisite: Management 101.
Staff/Offered every year

210 MANAGEMENT AND BEHAVIORAL PRINCIPLES/Lecture, Discussion
Concerns general principles of management, with a special emphasis on the behavior of people in organizational settings. Topics include principles of organization, decision making, leadership, motivation and rewards, job satisfaction, and appraising employee performance.
Staff/Offered every year

211 ORGANIZATION STRUCTURE AND PROCESS/Lecture, Discussion
This course surveys the major concepts in the area of organizational theory, with a special emphasis on the application of these concepts to business problems. Topics include the properties of organizational environments, organizational structure, organizational power and conflict, and organizational change. Prerequisite: Management 210.
Staff/Offered periodically

225 HUMAN RESOURCE MANAGEMENT/Lecture, Discussion
Covers the general areas of human resource management, including job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO and OSHA requirements, employee planning, and women in management.
Staff/Offered every year

226 INDUSTRIAL RELATIONS/Lecture, Discussion
An introduction to the concepts, theory, and practice of labor-management relations. Topics include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations.
Staff/Offered every year

230 MARKETING MANAGEMENT/Lecture, Discussion
Surveys the role of marketing in business and society, focusing on specific marketing activities. Topics include the marketing environment, marketing research and information systems, consumer behavior, the organizational consumer, products, pricing, distribution, promotion, international service, and nonprofit marketing. Prerequisites: Economics 010, 011; Management 101.
Staff/Offered every year

231 MARKETING RESEARCH/Lecture, Discussion
Marketing research focuses on consumer behavior and retail advertising. Topics include: primary and secondary data collection, questionnaires for attitude and awareness surveys, mail and phone surveys, personal interviews, focus groups, and data analysis techniques. Prerequisite: Management 230.
Staff/Offered periodically

234 CONSUMER BEHAVIOR/Lecture, Discussion

Consumer behavior involves an understanding of how people search for, purchase, use, evaluate, and dispose of the products, services, and ideas they expect will satisfy their needs. Central to this understanding is the study of the decision-making process, as well as the personality, perceptions, and attitudes of individuals. Also important is the influence of reference groups on individual buyer behavior: family, social class, cultures, and sub-cultures. Emphasis is on the issues of market segmentation and the diffusion of innovations. Ethical, legal, and public policy issues are also discussed. Prerequisite: Management 230.
Staff/Offered periodically

240 CORPORATE FINANCE/Lecture, Discussion

A comprehensive study of financial decision making from the perspective of the internal financial manager. Topics covered include valuation, loss of capital, capital structure, capital budgeting, and financial analysis. Prerequisites: Economics 010, 011, 160; Math 110 or 120; Management 101.
Staff/Offered every year

242 INVESTMENTS/Lecture, Discussion

Covers investment principles, market behavior, and investment strategy. Investment principles include: portfolio selection, fundamental analysis, portfolio theory, debt instruments and money markets, the stock option market, and alternative investments. Prerequisite: Management 240.
Staff/Offered periodically

250 OPERATIONS MANAGEMENT/Lecture, Discussion

Surveys techniques in the area of model building and operations research. Emphasis is on topics oriented toward business forecasting, inventory control, system reliability, waiting-line theory, and assembly-line balancing. Prerequisites: Economics 010, 011, 160; Management 101, 104; Math 110 or 120.
Staff/Offered every year

260 BUSINESS POLICY/Case Studies, Lecture, Discussion

This capstone-type course should be taken during the senior year. This course describes how the integration of major management functions (e.g., marketing, finance, and production) makes an organization capable of choosing and executing an appropriate strategy. Prerequisites: Management 210, 230, 240, 250.
Staff/Offered every year

262 BUSINESS ETHICS/Case Studies, Lecture, Discussion

The social, political, technological, and ethical issues confronting the modern corporation make it necessary for the contemporary manager to develop a broad-gauged knowledge base to deal with complex situations. This course examines the relationship between organizations and their many stakeholders. Managerial values and ethics are also analyzed.
Staff/Offered every year

278 BUSINESS LAW/Lecture, Discussion

Examines the legal framework within which U.S. businesses operate. It is concerned with the various laws that determine the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered

by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. The goal is to provide students with an understanding of the business and legal environments that will guide future management decisions and inquiry. There are assigned textual readings and class discussion of cases selected to illustrate these topics.
Staff/Offered every year

284 FEDERAL TAX ACCOUNTING/Lecture, Discussion

This is a basic course in the principles of federal income tax laws pertaining to individuals and organizations. Students develop an understanding of the effect of tax considerations on business decisions. The course explores general rules and accounting principles, emphasizing preparation of tax returns through problem analysis. Prerequisite: Management 101.
Staff/Offered every year

299 INTERNSHIP Offered for variable credit.

The M.B.A. Program Curriculum

The M.B.A. curriculum includes eighteen courses taken for credit, plus a noncredit mathematics review course that may be waived by students demonstrating competence in college mathematics.
The nineteen courses are grouped into five categories:

Prerequisite Course

MBA 299	*Mathematics for Managers* (not for credit)

Background Courses

MBA 301	*Foundations of Accounting*
MBA 302	*Statistical Methods*
MBA 303	*Management Economics*
MBA 304	*Introduction to Management Information Systems (MIS)*

Core Courses

MBA 310	*Organization Behavior*
MBA 330	*Marketing Management*
MBA 340	*Financial Management*
MBA 350	*Operations Management*

Capstone Courses

MBA 360	*Business Policy*
MBA 362	*Business in Society*

In addition, students are required to take eight elective courses, selected from among the areas listed below. Students may choose any electives for which they have met the prerequisite requirements. However, students may not enroll in more than three electives in any one of the functional areas. This restriction ensures a broad course of study aimed at providing overall management competence.

Elective Concentrations

At the start of their careers, most M.B.A. graduates will work in one of several management functional areas. Yet, functional specialties are practiced differently in different organization settings. For example, how managers view finance depends on whether they are employed in a large multinational corporation, a small partnership, a nonprofit hospital, or a new venture.

Clark's curriculum permits elective concentrations in the functional areas of accounting, finance, human resource management, marketing, and operations management. Concentrations also exist in the organizational settings of general management, health care management, international management and new venture management.

Clark thus offers students an opportunity to pursue up to two elective concentrations: one in a functional area and one representing an organizational setting. For example, a student interested in finance who intends to work in the health care industry might enroll in the following:

MHA 340	*Health Care Strategic Planning*
MHA 350	*Economic Aspects of the Medical Care Industry*
MHA 370	*Management Control and Financial Management of Health Care Organizations*
MBA 341	*Corporate Finance*
MBA 342	*Investments*

plus three additional electives

A student preparing for a career in international marketing might choose to take the following:

MBA 345	*International Finance*
MBA 375	*International Management*
MBA 335	*International Marketing*
MBA 331	*Marketing Research*
MBA 334	*Consumer and Industrial Buyer Behavior*

plus three additional electives

Elective Areas and Courses

OB/HRM/Industrial Relations

MBA 311	*Organization Structure and Process*
MBA 312	*Women and Men in Management*
MBA 313	*Career Development*
MBA 320	*Managerial Communications*
MBA 325	*Human Resource Management*
MBA 326	*Industrial Relations*
MBA 327	*Collective Bargaining*

Marketing

MBA 331	*Marketing Research*
MBA 332	*Sales and Sales Management*
MBA 333	*Market Pricing*
MBA 334	*Consumer and Industrial Buyer Behavior*
MBA 335	*International Marketing*
MBA 336	*Services Marketing*
MBA 337	*Business to Business Marketing*
MBA 338	*Advertising and Promotion*
MBA 339	*Product Management*

Finance

MBA 341	*Corporate Finance*

MBA 342	*Investments*
MBA 344	*Real Estate*
MBA 345	*International Finance*
MBA 346	*Financial Institutions*
MBA 348	*Corporate Risk Management*
MBA 349	*Speculative Markets*

Operations Management and MIS

MBA 351	*Optimization for Managers*
MBA 352	*Introduction to Database Design*
MBA 353	*Applied Business Forecasting*
MBA 355	*World-Class Manufacturing Systems*
MBA 356	*Decision Support Systems*

Competitive Strategy and the Business Environment

MBA 371	*New Venture Management*
MBA 372	*New Ventures Seminar*
MBA 373	*The General Manager*
MBA 374	*Strategic Management of Technology*
MBA 375	*International Management*
MBA 376	*Senior Executive Seminar*
MBA 378	*Legal Aspects of Management*

Directed Research and Projects

MBA 379	*Projects in Management*
MBA 396	*Special Topics*
MBA 398	*Directed Research in Management*
MBA 399	*Directed Readings in Management*

Accounting

MBA 380	*Management Control Systems*
MBA 381	*Analysis of Financial Statements*
MBA 382	*Accounting Information Systems*
MBA 383	*Accounting for Governmental and Not-for-profit Organizations*
MBA 384	*Individual Tax*
MBA 385	*Corporate Tax*
MBA 386	*Cost Measurement and Control*
MBA 387	*Financial Accounting and Reporting I*
MBA 388	*Financial Accounting and Reporting II*
MBA 389	*Financial and Operational Auditing*

Health Care Management

MHA 320	*Health Systems*
MHA 340	*Health Care Strategic Planning*
MHA 350	*Economic Aspects of the Medical Care Industry*
MHA 360	*Legal Aspects of Health Care Administration*
MHA 370	*Management Control and Financial Management of Health Care Organizations*
MHA 390	*Health Care Management*

Meeting Times and Locations

The M.B.A. Program is accessible to both full- and part-time students. It is offered at two locations: on Clark's campus in Worcester and at the Massachusetts Microelectronics Center (M^2C) in Westborough.

Clark operates on the semester system. During the fall and spring semesters, classes are held from 9 a.m. until noon and from 1 p.m. until 4 p.m. at the Clark campus. Classes meet from 6 p.m. to 9 p.m. in Worcester and Westborough. All classes meet once a week, on Monday, Tuesday, Wednesday, or Thursday. Two summer terms are held at both campuses, with classes meeting twice weekly in the evening from mid-May through the end of June and from early July to late August.

Courses are taught by the same faculty at both campuses; students may take courses at either campus. In Worcester, all required courses are taught at least once per year during the day and evening time periods, along with a wide selection of electives. All required courses are taught each year in Westborough, with electives generally available every other year. For scheduling details, students should consult the registration booklet, distributed prior to the start of each semester.

ACADEMIC POLICIES

General Graduation Requirements

Candidates for the M.B.A. degree must meet the requirements of nineteen courses: one noncredit prerequisite course, four background courses, four core courses, two capstone courses, and eight elective courses. Students must pass a minimum of ten courses (excluding MBA 299) in the Graduate School of Management in order to meet the residency requirement of Clark University's M.B.A. Program. A maximum of nine courses may be waived and/or transferred (see below). Students normally are permitted a maximum of six years from the date of their initial enrollment in the M.B.A. Program to complete all degree requirements. The minimum grade point average required for graduation is a 3.0 (B).

Course Waivers

Students may apply for waivers from nine of the nineteen courses required for graduation. Courses that may be waived are limited to the prerequisite course (MBA 299), the four background courses (MBA 301, 302, 303, and 304), and the four core courses (MBA 310, 330, 340, and 350).

Course waivers are based on transcript reviews, examinations, or both. Generally, a waiver reduces the number of courses the student must take. In most cases, a waiver will be granted if the student passes an elective course in the subject area of the waived course. Typically, a waiver is granted when an entering student presents evidence of having passed an equivalent graduate-level course (or two or more baccalaureate courses) in the relevant subject area. The student must have earned at least a B in such courses. Waivers will depend in part on how recently a substitute course was taken; e.g., courses in MIS taken more than five years prior to the date of application for waiver will not be acceptable. Students who wish to receive waivers should submit a completed *Request for Course Waiver* form with the application to the assistant dean for academic affairs. The opportunity for waiving courses exists only during a student's first year in the program. If your semester's registration depends upon a waiver, it *must* be approved prior to the registration deadline.

Transfer Credit and Residency Requirement

Students enrolled in the M.B.A. Program may receive transfer credit for postbaccalaureate work. The nineteen-course requirement may be reduced by two courses for students having appropriate graduate-level credits that have not been applied to another degree. Normally, transfer credit is assigned only to elective courses. Grades of at least B are required for course work recently completed at schools accredited by the American Assembly of Collegiate Schools of Business (AACSB). Transfer credit may be granted by examination for course work completed at non-accredited programs or taken more than five years prior to the date of application for transfer credit.

Prior approval by the assistant dean for academic affairs is required for transfer credit granted for courses taken after the student has matriculated in the Graduate School of Management. Normally, such approval is granted for appropriate course work that is not available at Clark. Regardless of the number of courses transferred or waived, M.B.A. candidates must pass a minimum of ten courses (excluding MBA 299) taken at Clark's Graduate School of Management.

Grade-Point Average

Master's degree candidates must maintain a minimum grade-point average of 3.0 in order to remain in good standing and eligible for graduation (A = 4.0 points, B = 3.0 , C = 2.0, and F = 0: + or - symbols attached to letter grades increase or decrease them, respectively, by 0.3). Waived courses, incomplete courses, and courses taken outside Clark University are not included in computations of grade-point averages.

Grading System

Letter grades are used in performance evaluation as follows:

A	Outstanding
B	Good
C	Marginal Pass
F	Failing
I	Incomplete: An *Incomplete* is given at thediscretion of the instructor when circumstances beyond the student's control prevent him or her from meeting specific out-of-class course requirements. Students have one year from the date of the last class meeting of the course to make up outstanding course work and thus receive grades. An incomplete course will be deleted from the student's record if not completed within the specified year.
W	Withdraw: Indicates that the student withdrew from the course. Students may not withdraw after the tenth scheduled class meeting.

Grade Changes

Once grades have been submitted to the Registrar's Office, grade changes can be made only if the instructor certifies in writing that the grade to be altered resulted from an error.

Full-time Students

To be considered a full-time student in the Graduate School of Management, an individual must be registered for at least three courses in a given semester.

Review of Graduate Standing

All student academic records are reviewed each semester. Students with cumulative grade-point averages of 3.0 or more are considered to be in good standing. While the grade of C earned in a course is a passing grade, a cumulative grade-point average of B is required for graduation. Thus, students whose cumulative grade-point averages fall below 3.0 are not considered to be performing adequately. Students are placed on academic probation when they have taken four or more courses and their cumulative grade point average falls below 3.0. Students who remain on academic probation after taking eight courses may be dismissed from the M.B.A. Program.

Leave of Absence

Students currently matriculated in the Graduate School of Management may take an official leave of absence for up to one year. Leave will be granted by the assistant dean for academic affairs on written application by the student. Leaves may be granted for a number of reasons relating to work, health, travel, or personal development. Students who do not register for classes in the semester following the leave of absence will be withdrawn from the Graduate School of Management. To regain admission, the student must reapply.

Joint M.B.A./M.S.N. or M.H.A./M.S.N. Programs

In conjunction with the University of Massachusetts Medical Center's Nursing School, Clark's Graduate School of Management offers a program that leads to the M.B.A. or M.H.A. and M.S.N. degrees. The program enables selected students to achieve both degrees by completing a rigorous and comprehensive two-year curriculum. Details about the program can be obtained by contacting the Graduate School of Management Admissions Office.

M.B.A. Program Courses

(*Refer to Graduate School of Management Catalog for more information.*)

MBA 299 MATHEMATICS FOR MANAGERS

Competence in algebra and familiarity with calculus are required in many of the courses taught in Clark's M.B.A. Program. This course is designed to assist students whose skills in mathematics are undeveloped. All M.B.A./M.H.A. candidates must either complete the course or be exempted from it. The course is offered Pass/Fail and does not carry graduate credit. Six modules of instruction are included: a review of algebra, linear algebra, introduction to differential calculus, introduction to integral calculus, applied business mathematics, and computer software applications.

MBA 301 FOUNDATIONS OF ACCOUNTING

Managers use accounting data to measure and evaluate organizational performance and to make decisions based upon their evaluations. This course introduces accounting as "the language of business" by identifying and discussing the generally accepted terminoloy and concepts. Topics include the accounting recording process, financial reporting and accounting principles, and the application of accounting information in managerial decision processes. Students are provided opportunities to enhance their analytic skills through practice in compilation, reformulation, and analysis of basic financial data.

MBA 302 STATISTICAL METHODS

In the increasingly competitive business environment, most firms have come to rely on quantitative methods for data analysis and decision making. This course emphasizes problem solving. Topics covered include probability theory, sampling theory, the central limit theorem, estimation, inference, hypotheses testing, regression analysis, and analysis of variance. Students learn how and when to apply these "tools" and how to interpret their results. (Prerequisite: MBA 299)

MBA 303 MANAGEMENT ECONOMICS

Managers of organizations–whether for-profit, non-profit, or government agencies–face a common set of resource allocation problems. This course will develop a student's ability to formulate and solve these problems, drawing upon the economic theories of the firm and industrial organization and mathematical optimization techniques. It also will provide the student with a framework for analyzing competitive and cooperative business situations from a strategic (game theoretic) perspective. Topics to be surveyed include: demand analysis, production and cost analyses, market structure and strategic behavior, pricing practices, government regulation, and decision making under uncertainty.

MBA 304 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (MIS)

One of the most important aspects of computing, management information systems, has had a significant effect on both operations and strategy. The systems are employed at all levels of management to achieve competitive advantage and to create new opportunities, products, and services. The objective of this course is to provide basic knowledge of the field of information systems. Topics include hardware, software, database management, data communication, systems analysis and design, and functional application areas, such as medicine, accounting, and manufacturing. Students also gain exposure to spreadsheet and database packages.

MBA 310 ORGANIZATION BEHAVIOR

Successful managers accomplish work with, and through, other people. This course focuses on how people behave as members of organizations, with a special emphasis on theory and research concerning individual and group behavior and processes. Topics include interpersonal relations and communications, motivation, group structure and processes, and leadership. The implications of crosscultural differences for management behavior in today's global organizations are explored, as well as the legal and interpersonal issues associated with managing a diverse workforce. A variety of techniques are used to enhance skill development, including self-assessment instruments, case discussions, role plays, and simulations.

MBA 311 ORGANIZATION STRUCTURE AND PROCESS

This course is designed to provide an understanding of the basic nature of social interaction, to introduce a variety of perspectives on organization theory, and to apply those concepts to actual business problems. Topics covered include: the structure of organizations, normative organizational patterns, organizational processes (decision making, communications, etc.), and the relationship of these topics to such factors as size, complexity, technology, and environmental influences. (Prerequisite: MBA 310)

MBA 312 WOMEN AND MEN IN MANAGEMENT

The infusion of women into nontraditional professions and management positions has led to changes in the interactions of women and men in work settings. The purpose of this course is to examine the problems which arise in male-female work relationships, the sources of these problems–individual, organizational, societal–and possible solutions to them. Topics to be covered include sex differences, sex-role development, career choice and mobility, work group and superior-subordinate interactions, use of power, career development, affirmative action programs, and strategies for achieving organization-wide change. (Prerequisite: MBA 310)

MBA 313 CAREER DEVELOPMENT

Skillful career management is vital to both professional success and personal satisfaction. This course helps students develop career management skills that are appropriate to any level of career development, from making initial career decisions to later career changes. Self-assessment instruments, exercises, and cases are used throughout the course. Topics include self-assessment, career decision making, job search strategies, organizational assessment, and socialization processes. (Prerequisite: MBA 310)

MBA 320 MANAGERIAL COMMUNICATIONS

This course is designed to help managers communicate with confidence by showing them how to prepare clear and concise memos, letters, reports, and proposals, as well as how to deliver effective oral presentations. Through active class participation and in-class writing exercises, students develop confidence in their ability to communicate effectively.

MBA 325 HUMAN RESOURCE MANAGEMENT

Faced with pressures from the work force, increasing international and domestic competition, and government regulations, corporations must continually re-evaluate employment policies and practices. Managers must ensure that an organization's competitive strategy is compatible with the needs and concerns of personnel. This course covers general areas of human resource management, such as job design, recruitment, management development, performance appraisal, counseling, labor relations, collective bargaining, wages and fringe benefits, EEO and OSHA requirements, and employee planning.

MBA 326 INDUSTRIAL RELATIONS

Broadly defined, industrial relations refers to the relationships between employees, unions, and employers. This course serves as an introduction to the concepts, theories, and practice of labor-management relations. Topics include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective bargaining agreement; disputes resolution procedures; and the evolution of public policy toward labor relations.

MBA 327 COLLECTIVE BARGAINING

Collective bargaining is a process by which representatives of labor and management seek agreement on the terms and conditions of employment. The public often has a vested interest in the process, especially when conflicts over terms of employment cannot be resolved at the bargaining table. Topics covered include the evolution of bargaining, theories of bargaining power and behavior, and relevant legislative frameworks. The range of bargaining issues is described, along with variations in bargaining units. The grievance procedure is examined with respect to the application and interpretation of agreements.

MBA 330 MARKETING MANAGEMENT

Marketing is the social and managerial process by which individuals and groups obtain what they need and want through the exchange of goods and services. The marketing efforts of businesses are similar to those of health care, service, and nonprofit organizations. Topics include market segmentation, consumer behavior, product development, product life cycles, promotion, pricing, and distribution. Emphasis is on the development of specific marketing strategies in a constantly changing social and business environment. Also discussed are international marketing, marketing to a diversity of cultures and sub-cultures, marketing ethics, as well as governmental regulation and the legal implications of marketing. (Prerequisites: MBA 302 and 303)

MBA 331 MARKETING RESEARCH
This course is designed to provide a fundamental knowledge of how and why marketing research is used to solve marketing problems. Taking a managerial perspective, the course emphasizes research for marketing consumer goods and services. Topics include: problem identification and definition, research design, questionnaire design and construction, project implementation, sampling, data collection and interpretation, and presentation and reporting of research findings. Students may undertake research projects for actual clients. (Prerequisite: MBA 330)

MBA 332 SALES AND SALES MANAGEMENT
Sales management integrates personal selling and marketing management, illustrating how the entire marketing organization functions as a team. The emphasis is on relationship selling, which seeks to establish long-run partnerships with customers. More attention is given to industrial sales than consumer sales, since more career opportunities involve selling products and services to businesses and other organizations. Topics include techniques of personal selling: recruiting, training, organizing, and motivating the sales force. Additional topics include compensation, forecasting, budgeting, and control. Legal and ethical issues are also discussed. (Prerequisite: MBA 330)

MBA 333 MARKET PRICING
A pricing strategy should be consistent with and reflect overall company objectives. Companies can use pricing strategies to gain market share, meet profit goals, or maintain the status quo. Companies may pursue more than one pricing objective at the same time and often re-examine pricing strategy in light of changes in the competitive environment. This course presents a management approach to pricing products and services in consumer, industrial, and "reseller" markets. Topics include: bargaining tactics, bidding strategies, pricing product lines for complex channels of distribution, life cycle and learning curve pricing, and intra-firm transfer pricing. (Prerequisite: MBA 330)

MBA 334 CONSUMER AND INDUSTRIAL BUYER BEHAVIOR
Understanding consumer behavior is essential to defining and maintaining a market. This course examines the purchasing behavior of individuals and groups. Topics include: complex decision-making models, buying habits, attitude theory, and the buying behavior of organizations. (Prerequisite: MBA 330)

MBA 335 INTERNATIONAL MARKETING
This course examines the problems that firms encounter as they enter international markets. The text and readings explore marketing problems facing joint venture and multinational firms, as well as the exporter and licensor. A range of marketing activities is covered in the context of international operations, including marketing research, product policy, pricing, distribution, promotion, planning, organization, and control. (Prerequisite: MBA 330)

MBA 336 SERVICES MARKETING
Highly competitive markets for service organizations, profit and nonprofit, require

strict attention to the production/marketing interface, as well as to the traditional marketing mix. The course focuses on the marketing implications of service intangibility, the inseparability of production and consumption, and conflicting server roles. These problems apply to a wide array of service organizations, including retailing and health care. Current models of the service organization are presented with insight developed through readings, cases, and interviews. (Prerequisite: MBA 330)

MBA 337 BUSINESS TO BUSINESS MARKETING
Organizations that market to other organizations encounter different problems than those that market to consumers. Business to business marketing is the marketing of goods and services to commercial enterprises, governments, and nonprofit institutions for use in the goods and services that they, in turn, produce for resale to other industrial customers. Emphasis is on the buyer behavior and the more complex decision-making processes of organizations. Topics covered include industrial market segmentation, product development, pricing, personal selling, promotion, and distribution. Additional topics are direct marketing, research and development, purchasing, and corporate planning. (Prerequisite: MBA 330)

MBA 338 ADVERTISING AND PROMOTION
Promotion, a component of the marketing mix, is any form of communication intended to inform, persuade, or remind people of products or services. Advertising is any form of impersonal communication of ideas, goods, or services paid for by an identified sponsor and is one of the major types of promotion. The course focuses on advertising and publicity as the most common and useful forms of promotion. The course integrates international, legal, and ethical aspects of promotion and covers topics such as media selection, public relations, and personal selling. (Prerequisite: MBA 330)

MBA 339 PRODUCT MANAGEMENT
The objective of this course is to prepare students to be effective product managers. Corporations often sell hundreds of individual and related products by giving marketing responsibility to product managers. Product managers are the champions of their product line; they develop marketing plans, see that they are implemented, monitor results, and take corrective action. Product management requires conceptual and decision-making skills in product portfolio decisions, new product development, product positioning and promotion, and product modification. (Prerequisite: MBA 330)

MBA 340 FINANCIAL MANAGEMENT
We assume financial managers make decisions that will increase the value of the firm by optimizing the size and timing of cash flows and minimizing accompanying risks. The course covers the major issues confronting financial managers, including the determination of optimal methods of raising and investing funds. (Prerequisites: MBA 301, 302, 303)

MBA 341 CORPORATE FINANCE
This course extends the presentation of the theoretical issues in finance provided in MBA 340. The student is exposed to additional financial theories and gains practice in applying theories to actual problems through analysis of case studies. The emphasis of this class is on the major, long-term financial decisions that managers face. Topics include risk, cost of capital, capital budgeting, and capital structure. (Prerequisite: MBA340)

MBA 342 INVESTMENTS

This course covers investment principles, market behaviors, and investment strategies. Students examine the types of risks associated with and the returns available from marketable securities. In addition to studying stocks and bonds, the course provides a risk-return analysis of alternative investment vehicles, such as options and futures. Views of investment professionals are presented to the class live or by video. (Prerequisite: MBA 340)

MBA 344 REAL ESTATE

This course covers the analysis and valuation of real estate investments. It focuses on the selection and financing policies for real property investments, which are shaped by spatial, legal, governmental, and tax factors. (Prerequisite: MBA 340)

MBA 345 INTERNATIONAL FINANCE

This course focuses on specific problems encountered by financial managers in corporations having international financial functions. Topics covered include foreign exchange risk, political risk, long-run investment and financing, working capital management, and financial control. (Prerequisite: MBA 340)

MBA 346 FINANCIAL INSTITUTIONS

This course analyzes the roles of banks and nonbank financial intermediaries in an advanced industrial economy. Topics include: the study of financial markets and institutions, the major financial intermediaries in the U.S. economy, interest rates and how they are set, government regulatory policies for financial institutions, and the impact of recent institutional and legislative changes on financial intermediaries. (Prerequisite: MBA 340)

MBA 348 CORPORATE RISK MANAGEMENT

Corporations face a wide variety of risks in such areas as finance, product liability, and damages to both human-made and natural resources. The course enables students to identify and manage these risks by providing a theoretical framework (Expected Utility Theory) for optimal decision making under uncertainty. Particular attention is paid to identifying and correcting judgmental biases in risk decision making. Also, students will be expected to develop expertise in the use of a wide range of traditional and innovative risk management strategies: insurance purchasing, financing strategies, hedging strategies (i.e., use of forwards, futures, and option contracts), and changes in organizational size and form. (Prerequisite: MBA 340)

MBA 349 SPECULATIVE MARKETS

This course presents a practical approach to the study of speculative investments. The course focuses on stock options and futures as speculative vehicles and as risk-reducing strategies. (Prerequisite: MBA 340)

MBA 350 OPERATIONS MANAGEMENT

Operations management involves the efficient use of resources to create goods or services that satisfy the needs of customers and clients. In both the profit and nonprofit sectors, successful management requires economically rational decisions regarding the design and operation of processes that transform such resources into goods or services. The course develops students' abilities to identify and structure operating problems and to identify appropriate techniques for resolving them. Example of topics covered include: modeling concepts and LP modeling/solution methods, basic forecast methods, location selection, inventory management, MRP, JIT, quality management/assurance, project management and control. (Prerequisites: MBA 299, 302, 304)

MBA 351 OPTIMIZATION FOR MANAGERS

This course provides an overview of important, practical tools that have been used to solve management problems. Explanation of the fundamental ideas behind these techniques will help students to apply them intelligently and flexibly to situations in the real world. Examples of the techniques are heuristics, simulation, shortest path, network models, dynamic programming, and so on. Thanks to desktop computers and user-friendly software, managers can now use these techniques themselves–a particularly attractive feature for small entrepreneurial firms. (Prerequisite: MBA 350)

MBA 352 INTRODUCTION TO DATABASE DESIGN

This course examines the role of information systems within the organization. Recent developments in theory and practice in MIS are emphasized, including conceptual foundations of information systems, office automation, decision support systems, the factory of the future, artificial intelligence and expert systems, and the management of information. An independent project is required. (Prerequisite: MBA 304)

MBA 353 APPLIED BUSINESS FORECASTING

Accurate forecasts–of sales revenues, quantities sold, prices, production capacity, market size and share, inventory levels, personnel requirements, and many other business measures–are important for making good management decisions. Applied forecasting projects are drawn from marketing, finance, economics, organizational behavior, strategy, and operations management to illustrate methodologies. Student term forecast projects are drawn from current local businesses or a special field of interest. Topics include forecasting with simple and multiple regression, time series analysis including classical and ARIMA methods, and exponential smoothing models. (Prerequisite: MBA 302)

MBA 355 WORLD-CLASS MANUFACTURING SYSTEMS

To compete in the growing international marketplace, firms must be able to compete on the basis of manufacturing costs, productivity, and product quality. Production managers face complex decisions as they try to balance productivity and quality against cost. This course compares traditional manufacturing methods with emerging trends such as Just-in-time, Flexible Manufacturing Systems, Total Quality Management, and Computer Integrated Manufacturing. (Prerequisite: MBA 350)

MBA 356 DECISION SUPPORT SYSTEMS

Optimization models can potentially be used to solve a wide range of management problems. Application of the models in today's business environment, however, requires robust, microcomputer-based, decision-aiding softwares to solve the models. In this course, students will study how companies such as IBM have actually developed and used optimization-based decision support systems to solve real-world problems. (Prerequisite: MBA 350)

MBA 360 BUSINESS POLICY

This course focuses on the integration of major management functions (e.g., marketing, organizational behavior, finance, and production) and the organizational processes for selecting and executing an appropriate competitive strategy. The course objectives are to develop skills for evaluating the impact of internal and external forces on an organization's strategic choices, to enhance understanding of unstructured decisions, to understand the relationship between corporate cultures and competitive strategies, and to assess the nature and importance of global strategies. (Prerequisites: MBA 310, 330, 340, 350)

MBA 362 BUSINESS IN SOCIETY

The contemporary manager is confronted with decisions complicated by social, political, technological, and ethical issues. This course examines the themes that underlie managerial decision making: core values and assumptions at the foundation of the U.S. business subculture, ethical issues that arise in the context of management decisions, and the impact of political environments on management decisions. Throughout the course, students consider and discuss the views of practicing managers. (Prerequisites: MBA 310 and 330)

MBA 371 NEW VENTURE MANAGEMENT

The entrepreneur encounters a unique set of problems in planning and developing a new business venture. This course emphasizes the skills needed to analyze existing markets and identify unexploited business opportunities. Topics include developing business plans, identifying financing strategies, and managing start-up operations. Students are exposed to entrepreneurial organizations and problems through case studies, field consultations with small-business managers, and class presentations by entrepreneurs. (Prerequisites: MBA 310, 330, 340)

MBA 372 NEW VENTURES SEMINAR

Each week, students meet with founders and managers of new business ventures and executives in venture capital companies. Seminar speakers will discuss the creation and management of new business ventures, stressing the differences between managing in new organizations and established bureaucracies. At the conclusion of each speaker's presentation, students join the speaker and seminar leader for a continuation of the discussion over dinner. Admission to the seminar is determined on the basis of the student's academic achievement at Clark. Students may not receive academic credit for both the *New Ventures Seminar* and MBA 376, the *Senior Executive Seminar*. (Prerequisites: all background and core courses. Enrollment is limited.)

MBA 373 THE GENERAL MANAGER

Using research on the behavior of chief executive officers and leaders, this course examines the activities and roles of effective general managers. Topics include: developing mission and strategy, linking strategy to operations, building and coaching cross-functional business teams, achieving superior customer satisfaction, encouraging innovation, and assuring enlightened human resource practices. The course covers managers of large and multinational firms, small businesses, and nonprofit organizations. (Prerequisites: MBA 301 and 310)

MBA 374 STRATEGIC MANAGEMENT OF TECHNOLOGY

This course focuses on the technology dimension of competitive strategies and strategy-making processes. Through cases and readings, strategic management concepts are used to analyze those critical points where technology intersects other processes and functions of the business firm. The perspective taken is that of the nontechnically-trained manager dealing with technology issues of strategic importance to the firm. (Prerequisites: MBA 310, 330, 350)

MBA 375 INTERNATIONAL MANAGEMENT

Managers of firms that operate in international markets face unique problems involving economic, legal, political, and social issues. This course focuses on the interaction of the manager with the various constituencies and aspects of an international/multinational firm. (Prerequisites: MBA 303 and 310)

MBA 376 SENIOR EXECUTIVE SEMINAR

The Senior Executive Seminar, offered jointly by Clark and Worcester Polytechnic Institute, gives Clark M.B.A. and M.H.A. students an opportunity to meet informally with CEOs, presidents, and upper-level executives. Each week a guest speaker conducts a two-hour seminar that includes an off-the-record question and answer period, with discussions continued over dinner. (Prerequisites: all background and core courses. Enrollment is limited.)

MBA 378 LEGAL ASPECTS OF MANAGEMENT

The legal framework within which U.S. businesses operate determines both the rights and obligations of persons taking part in business transactions. Through case studies and selected readings, the course emphasizes those areas of the law commonly encountered by business managers: contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability.

MBA 379 PROJECTS IN MANAGEMENT

This course is organized around projects provided by a variety of profit and nonprofit organizations in central Massachusetts. Teams of three to four second-year M.B.A. students are invited to work in these organizations as "consultants in training." Working with guidance from Clark faculty members and managers from the host organizations, the student teams analyze their assigned projects and recommend courses of action. Management, in turn, critically evaluates and responds to the students' proposals, in much the same manner that they respond to proposals from their own subordinates. (Prerequisites: all background and core courses. Enrollment is limited.)

MBA 380 MANAGEMENT CONTROL SYSTEMS

This course studies organizational planning and control and analyzes the ways in which management accounting practices can aid (and occasionally impede) planning and control processes. Topics include management control systems, key variables and performance measurements, organizing for control, budget planning, and measuring divisional performance. (Prerequisite: MBA 301; MBA 310 is recommended)

MBA 381 ANALYSIS OF FINANCIAL STATEMENTS

The topics covered in this course are intended to increase skill levels in reading and interpreting financial statements and reports, reconstructing and restructuring financial data, using and interpreting basic analytical techniques for financial statement analysis, and communicating financial results, both orally and in writing. (Prerequisite: MBA 301)

MBA 382 ACCOUNTING INFORMATION SYSTEMS

This course explains the various control and accounting procedures used in collecting, measuring, summarizing, and reporting financial data generated by an organization's operating units. The course emphasizes procedural techniques and studies the flow of financial data through an organization's accounting system. (Prerequisites: MBA 301 and 304)

MBA 383 ACCOUNTING FOR GOVERNMENTAL AND NOT-FOR-PROFIT ORGANIZATIONS

Accounting for governmental and not-for-profit organizations differs from that for commercial organizations in many important aspects: There are no shareholders, the profit motive is absent, and users of not-for-profit financial reports require different kinds of information. In the first half of this course, basic not-for-profit accounting concepts and models are discussed. The second half explores accounting procedures unique to federal, state, and local governments; hospitals; colleges and universities; and charitable organizations. Some aspects of budgeting, auditing, and internal controls are also studied. (Prerequisite: MBA 301)

MBA 384 INDIVIDUAL TAX

This is a basic course in the principles of federal income tax law pertaining to individuals and organizations. Students develop an understanding of the effect of tax considerations on business decisions. The course explores general rules and accounting principles, emphasizing preparation of tax returns through problem analysis. (Prerequisite: MBA 301)

MBA 385 CORPORATE TAX

This course studies the tax consequences surrounding the formation, operation, and termination of operating a business in corporate and partnership forms, as well as transactions such as mergers and acquisitions, dividends and distribution. In addition, the course reviews the federal estate and gift-tax systems. (Prerequisite: MBA 301; 384 or instructor's permission)

MBA 386 COST MEASUREMENT AND CONTROL

This course studies how to collect and analyze cost data, methods of cost control, and the relevance of various accounting data for managerial decision making in manufacturing and nonmanufacturing organizations. Topics include: standards, standard costing, variance analysis, detailed budget preparation, cost accumulation procedures, and various cost control and performance evaluation issues. (Prerequisite: MBA 301)

MBA 387 FINANCIAL ACCOUNTING AND REPORTING I

Discussion of the accounting conceptual framework, recognition and measurement of current and noncurrent assets, development of income statements, balance sheets, and cash-flow statements. (Prerequisite: MBA 301)

MBA 388 FINANCIAL ACCOUNTING AND REPORTING II

Recognition and measurement of current and noncurrent liabilities, accounting for shareholders' equity, pension costs, leases, income taxes, changes in price levels, changes in accounting principles, business combinations, fiduciaries, and multinational enterprises. (Prerequisites: MBA 301 and 387)

MBA 389 FINANCIAL AND OPERATIONAL AUDITING

This course covers fundamental aspects of financial auditing including management's responsibility for financial statements, the legal liability of auditors, evaluation of internal control structures, substantive tests and tests of systems, and audit reports. Operational auditing and current developments in environmental auditing are also covered. (Prerequisite: MBA 301)

MBA 396 SPECIAL TOPICS

Occasional and special purpose courses in management.

MBA 398 DIRECTED RESEARCH IN MANAGEMENT

Independent research on selected topics in management. Can be taken for one course credit with a faculty sponsor's approval and the approval of the assistant dean for academic affairs.

MBA 399 DIRECTED READINGS IN MANAGEMENT

Individual instruction under the sponsorship of a faculty advisor. Offered for one course credit. Restricted to topics not covered within other courses in the M.B.A. curriculum. A faculty sponsor and the permission of the assistant dean for academic affairs are required.

THE MASTER OF HEALTH ADMINISTRATION PROGRAM

Reflecting the administrative and technological complexity of today's health systems, the Master of Health Administration Program combines the resources of Clark's Graduate School of Management and the Department of Family and Community Medicine of the University of Massachusetts Medical School in Worcester. The program prepares graduate students for management careers in a wide range of health services and settings.

The Clark/UMass M.H.A. Program is oriented primarily toward students with significant prior work experience in any health field. However, exceptionally qualified applicants without sufficient experience in the health professions are admitted; exposure to management in the health field is required of such students and is arranged by the director of the M.H.A. Program.

The program's faculty from Clark and UMass constitute a challenging group of teachers with professional and research experiences in health and medical care administration, community health services, and management.

The University of Massachusetts Medical School, located in Worcester, has the following health science programs: the M.D., the Ph.D. in Medical Sciences, the M.S. in Nursing (M.S.N.), and the M.P.H. in Epidemiology, offered under the auspices of the School of Public Health at UMass/Amherst.

The Lamar Soutter Library of the UMass Medical School is a health sciences library containing an excellent collection of biomedical information. Its holdings include more than 120,000 volumes, 2,900 journal subscriptions, 22,000 units of microfilm, and 1,900 audiovisual items. This is the principal library resource for the M.H.A. Program.

Curriculum

The M.H.A. curriculum consists of seventeen courses, grouped into the following five categories:

Prerequisite Course	
MBA 299	*Mathematics for Managers* (not for credit)
Required Background Courses	
MBA 301	*Foundations of Accounting*
MBA 302	*Statistical Methods*
MHA 320	*Health Systems*
Required Core Courses	
MBA 310	*Organization Behavior*

MHA 330	*Principles of Epidemiology*
MHA 350	*Economic Aspects of the Medical Care Industry*
MHA 360	*Legal Aspects of Health Care Administration*
MHA 370	*Management Control and Financial Management of Health Care Organizations*
MHA 380	*Health Policy*
MHA 390	*Health Care Management*

Required Field Project

MHA 400	*Applied Field Project*
or	
MHA 400A	*Expanded Applied Field Project*

Electives (five required)

MBA 304	*Introduction to Management Information Systems (MIS)*
MBA 325	*Human Resource Management*
MBA 330	*Marketing Management*
MBA 336	*Services Marketing*
MHA 340	*Health Care Strategic Planning*
MHA 382	*Hospital Administration*
MHA 383	*Ambulatory Care Administration*
MHA 384	*Health Care Quality Improvement*
MHA 396	*Special Topics in Health Services Management*
MHA 399	*Directed Readings*

Students begin the M.H.A. Program by taking the prerequisite course and the ten required background and core courses. The capstone courses, *Health Policy* (MHA 380) and *Health Care Management* (MHA 390), should be taken following the eight other required background and core courses.

Electives

Students may select their five elective courses in order to focus on a particular aspect of health care management or to study the management of specific types of health institutions and programs. Examples of the former type include:

MBA 304	*Introduction to Management Information Systems*
MHA 340	*Health Care Strategic Planning*
MBA 330	*Marketing Management*
MHA 384	*Health Care Quality Improvement*

Elective courses that focus on different parts of the health field include:

MHA 382	*Hospital Administration*
MHA 383	*Ambulatory Care Administration*

In addition to the five electives, each student completes *Applied Field Project* (MHA 400), a faculty-supervised independent study designed to demonstrate the student's ability to apply health administration concepts to a problem of his or her choice. A top-level health care manager serves as advisor on each project. Students without significant health services management experience are required to complete the *Expanded Applied Field Project* (MHA 400A), which includes considerable exposure to management practice. Students are expected to complete MHA 400 (or MHA 400A) within one semester. If this is not done, then the student must register for the course again in the following semester and pay half tuition.

Meeting Times

Clark operates on the semester system. During the fall and spring semesters, classes are held from 9 a.m. until noon and from 1 p.m. until 4 p.m. at the Clark campus.

Classes meet from 6 p.m. to 9 p.m at Clark, in Westborough, and at the UMass Medical School's campus. Classes meet once a week, on Monday, Tuesday, Wednesday, or Thursday. Two summer sessions are held at Worcester and Westborough, with classes meeting twice weekly in the evening from mid-May to the end of June and from early July to late August.

For scheduling details, students should consult the registration booklet distributed prior to the start of each semester.

Academic Policies

General Graduation Requirements

Candidates for the M.H.A. degree must meet the requirements of seventeen courses: one prerequisite course, three background courses, seven core courses, five electives, and an applied field project. Students must take a minimum of twelve courses to meet the residency requirement of the Clark/UMass M.H.A. Program. Students normally are permitted a maximum of six years from the date of their initial enrollment in the M.H.A. Program to complete all requirements for the degree. The minimum grade-point average required for graduation is 3.0 (B).

Course Waivers

Students may apply for waivers from four of the seventeen courses required for graduation. Courses that may be waived are limited to MBA 299, MBA 301, MBA 302, and MHA 320.

Course waivers are based on transcript reviews and/or examinations and are granted by the Clark/UMass M.H.A. faculty. Generally, a waiver reduces the number of courses the student must take. In some cases, a waiver will be granted subject to the requirement that the student pass an elective course in the subject area of the waived course. Typically, a waiver is granted when an entering student presents evidence of having passed an equivalent graduate-level course (or two or more baccalaureate courses) in the relevant subject area. Grades of at least B must have been earned in such courses. Waivers will depend in part on how recently a substitute course was taken. Students who wish to receive waivers should submit a completed *Request for Course Waiver* form to the director of the M.H.A. Program. Regardless of the number of courses transferred or waived, M.H.A. candidates must pass a minimum of twelve courses while matriculating in the Clark/UMass program.

Transfer Credit

Students enrolled in the M.H.A. Program may receive transfer credit for postbaccalaureate work. The seventeen-course requirement may be reduced by two courses for students who have appropriate graduate-level credits. Transfer credit is assigned only to elective courses. Grades of at least B are required for course work recently completed at schools accredited by the American Assembly of Collegiate Schools of Business (AACSB) or the Accrediting Commission on Education for Health Services Administration (ACEHSA). Transfer credit may be granted by examination for course work completed at unaccredited programs or taken more than five years prior to the date of application for transfer credit.

Prior approval of the faculty is required for transfer credit granted for courses taken after the student has matriculated in the M.H.A. Program. Normally, such approval is granted for appropriate course work that is not available at Clark/UMass.

Other Policies

Policies governing the use of grades and leaves of absence are the same as those described for the M.B.A. program.

M.H.A. Program Accreditation

The joint Clark University/University of Massachusetts Medical School M.H.A. Program is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA). ACEHSA was organized in 1968 and has, as of June 1991, accredited sixty graduate programs in the United States and Canada. The commission has seven corporate members:

The American College of Health Care Administrators (ACHCA),
The American College of Healthcare Executives (ACHE),
The American College of Medical Group Administrators (ACMGA),
The American Hospital Association (AHA),
The American Public Health Association (APHA), and
The Association of University Programs in Health Administration
(AUPHA); a joint seat is shared between the Canadian Hospital Association
(CHA) and the Canadian College of Health Service Executives (CCHSE).

There also is one consulting member, the Association of Mental Health Administrators (AMHA). ACEHSA has been accorded formal recognition by the Council on Postsecondary Accreditation and the U.S. Department of Education.

M.H.A. PROGRAM COURSES

MBA 299 Mathematics for Managers

(See MBA Courses)

MBA 301 Foundations of Accounting

(See MBA Courses)

MBA 302 Quantitative Methods

(See MBA Courses)

MBA 310 Organization Behavior

(See MBA Courses)

MHA 320 HEALTH SYSTEMS

This course should be one of the first taken in the M.H.A. Program because it provides a framework that enables the student to see the contributions that the other required courses make to health system management. Initially, this course examines various input-throughput-output models of health systems and discusses the information necessary to understand the variety of components and links. It then uses the systems approach to identify key issues in various health service sectors: for example, primary care, hospital services, and high-technology services. Discussions and student papers focus on key issues related to health systems in the United States and other countries.

MHA 330 PRINCIPLES OF EPIDEMIOLOGY

Epidemiology focuses on understanding disease in human populations. This course focuses on the managerial uses of epidemiology and covers the basic principles and skills used by the epidemiologist to uncover and explain the distribution and determinants of disease. These include: description of disease by person, place, and time; principles of study design; and analysis and interpretation of epidemiologic data. To help students learn to evaluate studies critically, the course also provides concepts useful in evaluating health programs.

MHA 340 HEALTH CARE STRATEGIC PLANNING

Health care managers must constantly assess how well their institutions are meeting community needs in today's rapidly changing health care marketplace. Community health planning, strategic planning, and marketing all involve interrelated concepts and methods important for such assessments. This course focuses on planning practice and includes an in-depth examination of the following topics: systems diagnosis and problem assessment; goal and priority setting; cost/effectiveness studies; and program development, implementation, and evaluation. Health status, service, and resource-based planning approaches are covered for both institutions and area-wide health systems. The course also analyzes actual plans.

MHA 350 ECONOMIC ASPECTS OF THE MEDICAL CARE INDUSTRY

The planning, regulation, and delivery of health services in the United States are constantly changing, largely in response to economic forces. This course introduces students to the basic concepts of macroeconomics and microeconomics, then examines economic aspects of the health service system in terms of production, distribution, and institutional structure. Topics include determining demand for medical care, financing, delivery mechanisms and their effects, and the medical manpower market. The role of government planning and regulation of the medical care industry is also studied. Particular emphasis is given to an economic analysis of the major proposals to restructure the U.S. medical care system. Prerequisite: MBA 302

MHA 360 LEGAL ASPECTS OF HEALTH CARE ADMINISTRATION

The legal system—especially the judiciary—has had a growing impact on health care management in recent years. As a result, managers should understand legal implications of various situations, both to recognize the need for legal assistance and to work productively with attorneys. As a survey of health law, this course incorporates a wide range of concerns from the business law side of health care delivery systems to the legal aspects of the provider-patient relationship. Its focus is the study of legal foundations, principles, and processes, including the origins of health law, individual and corporate liability, legal aspects of hospital administration, health legislative activities, and controversial medical/legal/ethical issues.

MHA 370 MANAGEMENT CONTROL AND FINANCIAL MANAGEMENT OF HEALTH CARE ORGANIZATIONS

Control and financial decision making in health care organizations have become increasingly sophisticated in recent years, as the efficient allocation of resources became a critical problem. The objective of this course is to provide students with a working knowledge of selected financial and management control techniques pertaining to cost accounting, pricing, productivity, operations, and capital budgeting, as well as working capital and long-term capital. (Prerequisites: MHA 320, 350; MBA 301, 302)

MHA 380 HEALTH POLICY

Health care managers develop and implement policies for their institutions and often do so for communities, states, or even nations. These decisions involve a synthesis of the various disciplines represented in the M.H.A. curriculum, as well as an understanding of institutional and governmental policy-making processes. This capstone course centers around case studies, including many "living case studies" presented in class by health care executives who share problems from personal experience. This course involves a high level of student participation. Topics for Applied Field Project MHA 400 are often suggested. (Prerequisites: students should take the background and core courses prior to MHA 380)

MHA 382 HOSPITAL ADMINISTRATION

Since most health care expenditures go to hospitals, this sector of the health system interests many health care managers. Specific topics include organizational structure, management and medical staff relations, the role of the governing body, plant and equipment management, hospital and physician reimbursement, as well as operational and strategic issues. The course covers a variety of hospital types, from university teaching hospitals to small rural hospitals. (Prerequisites: MHA 320; MBA 301, 302, 310)

MHA 383 AMBULATORY CARE ADMINISTRATION

Ambulatory care is among the fastest growing sectors of the U.S. health system. This growth is occurring in a variety of organizational settings, including free-standing health centers, health maintenance organizations, and hospital outpatient departments. Planning and managing this growth challenge is the ambulatory care manager. This course addresses both the health policy environment that promotes ambulatory care and internal management issues in ambulatory care organizations. Case studies are used, reflecting a variety of ambulatory care institutions and management problems.

MHA 384 HEALTH CARE QUALITY IMPROVEMENT

This course examines the development of quality improvement programs in health institutions. Emphasis is on the theory and methods of Total Quality Management and Continuous Quality Improvement as applied in health care and other industries. Case studies of hospital quality improvement are used. Students also analyze actual hospital data and write a paper on the results. (Prerequisites: MBA 301, 302, 310; MHA 320)

MHA 390 HEALTH CARE MANAGEMENT

Improving the effectiveness of complex health care organizations is the challenge of health administration. To do so, the manager must understand the relationships among corporate strategy, organizational structure and process, and internal management systems. This course covers managerial issues such as strategic management, the job of the manager, organizational culture, organizational processes, leadership, decision making, and implementation. (Prerequisites: background and core courses).

MHA 396 SPECIAL TOPICS IN HEALTH SERVICES MANAGEMENT

A seminar providing students with the opportunity to address in depth an important topic in health services management. (Prerequisites: MBA 301, 302, 310; MHA 320)

MHA 399 DIRECTED READINGS

Students may design a directed readings course with individual faculty members in order to develop in-depth knowledge about a particular aspect of health care management. A faculty member's written approval of the specific topic is required before registration is permitted.

MHA 400 APPLIED FIELD PROJECT

A faculty-supervised independent study designed to demonstrate the student's ability to apply health administration concepts.

MHA 400A EXPANDED APPLIED FIELD PROJECT

A faculty-supervised independent study designed to demonstrate the student's ability to apply health administration concepts. This course gives students without management experience additional exposure to management interactions.

Mathematics and Computer Science

DEPARTMENT FACULTY

John F. Kennison, Ph.D., *chair:* topology, category theory

Kenneth J. Basye, Ph.D.: artificial intelligence, robotics

Zarko Bizaca, Ph.D.: differential geometry

Don Cantor, Ph.D.: software engineering, expert systems

Arthur Chou, Ph.D.: differential geometry, theoretical computer science

Frederic Green, Ph.D.: computational complexity, theory of computation

David Joyce, Ph.D.: algebraic topology, combinatorics, computer science

Robert W. Kilmoyer Jr., Ph.D.: algebraic representation theory of groups, artificial intelligence

Donggyum Kim, Ph.D.: automorphic representations, lie and algebraic groups

Lawrence E. Morris, Ph.D.: automorphic representations, algebraic geometry

Lee Rudolph, Ph.D.: low-dimensional topology, algebraic geometry

Natalia Sternberg, Ph.D.: applied mathematics, differential equations, scientific computing

Evelyn Vaskas, Ph.D.: algebra, number theory

UNDERGRADUATE PROGRAMS

The department supports undergraduate majors in computer science and in mathematics. The Computer Science Program is described elsewhere in this catalogue, under the heading "Computer Science." The mathematics major is described below. The department also offers courses that play an important service role in other disciplines. (See the text "Courses for the Nonmajor" below.)

THE MATHEMATICS MAJOR

In keeping with the liberal arts tradition, the mathematics major at Clark aims to provide a solid education in mathematical principles both for the student who wishes to apply mathematics in the everyday world, as well as for the student who wishes to proceed to graduate school in mathematics itself. In recent years, mathematics majors from the department have been accepted for graduate studies at schools such as Colorado, Maryland, Oregon, and Yale universities in mathematics, computer science, and economics. Our graduates have been employed by the public and private sectors in statistics, mathematical modelling, actuarial science, and education.

The mathematics major is built around a core of fundamental courses. It is important to begin the major early. Calculus and the core courses should be taken as soon as possible. The advanced electives provide some flexibility and allow students to tailor the major to their needs. Following the description of the requirement there are suggestions for concentrations in pure mathematics, applied mathematics, and actuarial science.

DECLARING A MAJOR AND CHOOSING AN ADVISOR

The department has a system of advising to assist students with course selection. A student must declare his or her major no later than the end of the sophomore year. At the time a major is declared, the student should select an advisor from the department faculty, who will sign the "declaration of major" form provided by the registrar. This advisor will help the student design the best program of courses to suit his or her goals. A department form also is completed at this time and kept on file at the department office.

NOTICE ON CHANGES IN THE MAJOR

The requirements for the major have been changed from those described in the *1990-92 Clark University Academic Catalogue*. Students declaring a major after June 1, 1992, must satisfy the requirements listed below. Those who declared before June 1, 1992 may satisfy either the old requirements or these new requirements.

REQUIREMENTS

Core Courses: *These courses are prerequisites for the advanced courses and therefore should be taken as soon as possible.*

• *Calculus* (Math 124, 125 or Math 120, 121) (Math 110, 111, 112 also may be used.)	2 courses
• *Linear Algebra* (Math 130)	1 course
• *Intermediate Calculus* (Math 131)	1 course
• *Introduction to Modern Analysis* (Math 172)	1 course

(Math 213, taken before 1990, may substitute for Math 172.)

Breadth Courses

• *Modern Algebra* (Math 225)	1 course
• Two math electives (Math 103, 104, 105, 106, 114 or any courses beyond Math 125)	2 courses

Depth Courses

• Four (4) additional courses at the 200 level, one being a capstone course to be worked out with the major advisor	4 courses
Total:	12 courses

SUGGESTED SPECIALIZATIONS IN MATHEMATICS

Pure mathematics is the study of mathematics for its own sake. Many students are originally attracted to mathematics because of its powerful applications, but a taste for pure mathematics often develops after studying the subject. Students planning to study mathematics in graduate school should consider programs in either pure or applied mathematics. Suggested courses include Math 214, *Modern Analysis*; Math 216, *Complex Analysis*; Math 226, *Modern Algebra II*; and Math 228, *Topology*.

Applied mathematics is the study of mathematics for its applications to the natural or social sciences. The key to applied mathematics is the modelling of natural or social phenomena by mathematical techniques including differential equations, linear systems, and stochastic processes. Suggested courses include: Math 212, *Numerical Analysis*; Math 164, *Mathematical Models*; Math 214, *Modern Analysis*; Math 216, *Complex Analysis*; Math 217-218, *Mathematical Statistics*; and Math 244, *Differential Equations*.

Actuarial science is the study of finance and insurance. Study in this field requires a firm grounding in mathematics and statistics and an understanding of economics and business management. Suggested courses include: Math 164, *Mathematical Models*; Math 213, Math 217-218, *Mathematical Statistics*; Math 244, *Differential Equations*; and courses in economics or business management.

HONORS PROGRAM

Majors in mathematics who maintain at least a 3.2 average (4.0 scale) in courses required for their major may apply for the departmental honors program. Application in writing must be received by the end of the junior year by a prospective honors advisor or by the chair of the department. Honors may be achieved in one of two ways:

1. A unified four-course sequence as a senior (some parts of which may consist of readings courses), followed by a comprehensive examination.
2. An honors thesis is to be presented at an oral defense or at a department seminar. This thesis may be an independent or joint research project, or an analytic dissertation. Supporting course work may be required. The student registers for Math 299.8 for course credit for an honors thesis.

Upon satisfactory completion of the program, the department may recommend graduation with honors, high honors, or highest honors.

SECONDARY EDUCATION CERTIFICATE IN MATHEMATICS EDUCATION

The requirements for this certificate include courses in education and courses in mathematics. The mathematics courses include *Calculus* (Math 110-112, 120-121, or 124-125)), *Theory of Numbers* (Math 104), *Geometry* (Math 128), *Statistics* (Math 217-218), and 200-level mathematics courses to bring the total number of mathematics courses to nine. See the Education Department section elsewhere in this catalogue for required courses in education and more information on the program.

MATHEMATICAL SERVICES

The department offers courses to meet the needs of students who will be using mathematics a tool for studying other areas. Math 015, *Elements of Mathematics,* is a noncredit course covering elementary concepts needed for Math 018. Math 018, *Problem Solving with Algebra*, reviews basic algebraic skills and applications to concrete situations. This course includes background for various departmental quantitative methods and statistics courses as well as for Math 110, *Functions and Calculus I.*

CALCULUS SEQUENCES

Knowledge of calculus is essential for any serious student of the natural sciences or mathematics. It also is used heavily in economics and has been applied extensively in other disciplines.

There are three calculus tracks:

Math 110, 111, 112	*Functions and Calculus*
Math 120, 121	*Calculus* (Regular)
Math 124, 125	*Honors Calculus*

Generally speaking, if a full year of calculus is required, then any of the above sequences may be used. If one semester of calculus is required, then either Math 124 or Math 120, or the two-semester sequence–Math 110, 111–would be appropriate.

Students will normally start calculus with Math 120, *Calculus I*, or Math 124, *Honors Calculus*; both open to first-year students who pass the placement test. Students with less preparation are advised to take Math 110, *Functions and Calculus*, and continue with Math 111. Strong students are urged to start with *Honors Calculus*, Math 124. This is usually a better option than omitting calculus, even if sufficient achievement is shown on the advanced placement test given in high school.

MATHEMATICS PLACEMENT TEST

All new students planning to take mathematics courses should take the mathematics placement test given during orientation and preregistration weeks. (Other diagnostic tests also are available for students who are uncertain about which courses to take.) The placement test will place students in one of five levels: Math 015, Math 018, Math 110, Math 120, or Math 124. Students may challenge their placement by this test by taking backup placement tests. Students with advanced placement credit in Calculus are exempt from the placement test.

COURSES FOR THE NONMAJOR

Students majoring in other disciplines may want or require a cluster of courses in the discipline of mathematics. Clusters in math usually begin with a year of calculus, followed by other courses, which vary depending on the application area. Courses with wide application in natural and social sciences include Math 130, *Linear Algebra*; Math 131, *Intermediate Calculus*; Math 164, *Mathematical Models*; and Math 217-218, *Mathematical Statistics*.

Students who want to experience some of the beauty of mathematical reasoning at an elementary level might take Math 104, *Number Theory*, or Math 103, *Mathematical Games*.

GRADUATE PROGRAM

Consult the department regarding the most current status of this program. The department offers courses leading to the degrees of master of arts and doctor of philosophy in mathematics.

The requirements for the M.A. are:

1. ten full courses at least eight of which must be on the 300 level. These courses usually include one or two full courses of Math 330–the writing of the master's thesis. They may include seminars and reading courses;
2. the basic courses, Math 316, 318, and 325. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question;
3. a master's thesis; and
4. an oral examination.

A student working toward a Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. preliminary examination.

The requirements for the Ph.D. follow the general requirements of the graduate school. The Ph.D. preliminary examination is usually given orally but may be written under certain circumstances. Students should consult with their advisors by November of the second year. Students entering with a master's degree should discuss the examination with a department advisor immediately. Failure to take this examination at the appropriate time may result in the department not recommending a student for continued support. Scholarships, graduate instructorships, and new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision concerning this requirement will depend heavily upon the recommendation of the candidate's advisor.

All candidates for the M.A. and Ph.D. degrees in mathematics are required to serve as teaching assistants as part of the work for their degrees.

MATHEMATICS COURSES

015 ELEMENTS OF MATHEMATICS/Workshop

A noncredit course for students who need to improve basic understanding of mathematics before continuing. Consult the department for more details about mathematical services for students needing extra help.
Staff/Offered in Fall 1993

018 PROBLEM SOLVING WITH ALGEBRA/Workshop

Centered on solving numerical problems using variables and equations, the course teaches the skills needed to work with numbers, variable expressions, equations, and graphs. Assignments from the text give students practice in the skills of algebra; class-time is spent focussing on the understanding and application of the concepts involved. Students solve problems independently after gaining experience by working on other problems together in class. One course credit.
Ms. Cotton/Offered every semester

103 MATHEMATICAL GAMES/Lecture, Seminar

The mathematical theory of deterministic games whose players have complete information. Examples of such games include Hackenbush, Nim, and Go. Games of this type form ideal subject matter for formal analysis. The values of game positions have an algebraic structure and may be used as a foundation of a mathematical theory of numbers (the so-called surrealistic numbers). The course explores game theories of Grundy and Conway, the max-flow min-cut theorem, and other graph-theoretic subjects and numbers. No prerequisites other than high school algebra. This course is sometimes offered as a first-year seminar.
Mr. Joyce/Offered periodically

104 ELEMENTARY NUMBER THEORY/Lecture

An introduction to number theory, this course also aims to train students to understand mathematical reasoning and learn to write proofs. Topics covered include the unique factorization of integers as products of primes, the Euclidean algorithm, Diophantine equations, congruences, Fermat's theorem, and Euler's theorem (and some applications–e.g., calendar problems, magic squares, cryptology). Prerequisite: appropriate score on the mathematics placement test.
Mr. Morris, Ms. Vaskas/Offered every other year

105 HISTORY OF MATHEMATICS/Lecture, Discussion

Explores major themes–calculation, number, geometry, algebra, infinity–and their historical development in various civilizations, ranging from the antiquity of Babylonia and Egypt through classical Greece, the Middle and Far East, and on to modern Europe. Analyzes the tension between applications of mathematics and the increasing tendency toward formalism. Presentations and discussions predominate in class.This course satisfies the *historical perspective*.
Mr. Joyce/Offered every other year

110, 111, 112 FUNCTIONS AND CALCULUS I, II, III/Lecture, Discussion

These courses are designed for the nonmajor, or for the less well-prepared student. Development of the function concept including logarithms and exponential functions, differential and integral calculus, maximization problems, related rates, graphing, and applications to social science. In Math 110,111, trigonometric functions and theory are not covered in depth (so 110 and 111 are not recommended for majors in physics, chemistry, or mathematics, unless followed up by Math 112, which reviews trigonometry and covers theory, trigonometric calculus, and sequences and series). Students may not receive credit for both Math 110 and Math 120, or for both Math 111 and Math 121. These courses fulfill the *Formal Analysis* requirement. Prerequisite: Math 018 or a suitable score on the mathematics placement test.
Mr. Joyce, Mr. Kennison/Offered every semester

114 DISCRETE MATHEMATICS/Lecture

This course studies mathematical structures that naturally arise in computer science. Topics include elementary logic and set theory, equivalence relations, functions, counting arguments, asymptotic complexity, inductively defined sets, recursion, graphs and trees, Boolean algebra and combinatorial circuits, finite state automata, and diagonalization and countability arguments. Proofs and problem solving are emphasized. Prerequisite: Math 018 or a suitable score on the mathematics placement test.
Mr. Chou, Mr. Morris/Offered every year

115 INTRODUCTION TO LOGIC/Lecture, Discussion

The propositional calculus and the first-order predicate calculus, which consist of a symbolic language and a method of proving statements made in that language, are constructed and discussed. This course fulfills the *Formal Analysis* requirement.
Mr. Joyce/Offered every other year

120 and 121 CALCULUS I and II/Lecture, Discussion

Topics in Part I include functions, sequences and limits, continuity, differentiation of algebraic and trigonometric functions, mean value theorem, L'Hôpital's rule, and various applications. Topics in Part II include motivation for, and definition of, Riemann sums and integrals; techniques and application of integration; improper integrals; transcendental functions (logarithms, exponential functions, and inverse trigonometric functions); series and Taylor series. In this course, rigorous statements and intuitive notions are distinguished carefully. Calculus is essential for majors in biology, chemistry, computer science, mathematics, physics, and E.T.S. (environment, technology, and society). Math 120 and 121 fulfill the *Formal Analysis* requirement. Prerequisite: appropriate score on the mathematics placement test.
Mr. Kennison, Ms. Vaskas/Offered every year

124 and 125 HONORS CALCULUS I and II/Lecture

This course is for mathematics majors and others who are interested in a deeper and more rigorous study of the topics considered in Math 120 and Math 121 and is strongly recommended for all mathematics majors and for students who have had previous experience with calculus. This course fulfills the *Formal Analysis* requirement. Prerequisites: An appropriate score on the mathematics placement test.
Mr. Joyce, Mr. Morris, Mr. Rudolph/Offered every year

128 GEOMETRY/Lecture

This course begins with a discussion of Euclidean geometry and quickly proceeds to modern related topics. Such topics may include Hilbert's axioms of geometry, the parallel postulate, hyperbolic (Lobachevskian) geometry, elliptic geometry, projective geometry, models of such geometries and philosophical implications of their existence, finite geometries, Klein's Erlanger Programme, and automorphism groups of geometries. One of the aims of this course is to show the beauty of the deductive approach in mathematics. Prerequisites: high school geometry, and either a semester of college mathematics or permission of the instructor.
Mr. Joyce, Mr. Rudolph/Offered every other year

130 LINEAR ALGEBRA/Lecture, Discussion

This course is a prerequisite for *Intermediate Calculus*, and is a requirement for all mathematics majors. Topics include systems of linear transformations, minimum and characteristic polynomials, eigenvectors and eigenvalues, and determinants and bilinear forms. Corequisite: Math 121 or 125. (Students who have previously had Math 119 or 133, or who took Math 130 prior to Fall 1990 should consult the department about this course.)
Mr. Rudolph, Ms. Sternberg/Offered every fall

131 MULTIVARIATE CALCULUS/Lecture, Discussion

Differential and integral calculus in several variables. Line and surface integration, Stokes' theorem. Prerequisites: Math 121 or 125, and Math 130.
Mr. Rudolph, Ms. Sternberg/Offered every spring

147 PROBABILITY THEORY AND ITS APPLICATIONS/Lecture

The aim is to familiarize students with the probabilistic way of thinking, modelling, and problem solving, which underlie many disciplines in the social sciences and physical sciences, and in computer science. Different models of random phenomena are discussed. The course includes various probability distributions, Markov Chains, and stochastic processes. Rather than focussing on methods and formulae, this course emphasizes intuition and basic ideas. Applications are made to statistical estimation, queuing theory, probabilistic analysis of computer performance and algorithms. Prerequisite: Math 121 or Math 125.
Mr. Chou, Mr. Kennison/Offered periodically

164 MATHEMATICAL MODELS/Lecture

Mathematics is widely used (and misused) to model phenomena of all sorts. Mathematical models can be descriptive or predictive, deterministic or nondeterministic, dynamic or static, stable or chaotic. Students in this course construct models and critique each other's constructions as well as examples from the literature. Special attention is paid to issues of measurement, robustness, and sensitive dependence on initial conditions. Prerequisites: one year of calculus, or one year of

programming plus one semester of calculus.
Mr. Joyce, Mr. Kennison, Mr. Rudolph/Offered periodically

172 INTRODUCTION TO MODERN ANALYSIS/Lecture

This course introduces analytic concepts that provide a language and unifying framework for theories encountered in different areas of mathematics. Students learn how to understand, formulate, and prove mathematical statements. Ideas first encountered in calculus are extended and studied using topological methods. Topics include convergence, metric and normed spaces, compactness, completeness, and Lebesgue integrals. Students who completed Math 125 (or who did well in Math 121) are encouraged to take Math 172 in the sophomore year. All math majors must take Math 172 by the junior year at the latest. Corequisite: Math 130.
Mr. Chou, Ms. Sternberg/Offered every year

201 PROSEMINAR IN MATHEMATICS/Seminar

The presentation of topics in mathematics by and for senior undergraduates. These presentations acquaint students with diverse subjects, introduce them to researching known topics, and give them practice in presenting material in front of their peers. Faculty members present surveys of their research areas. Possible topics include: category theory, knot theory, automorphic forms, topos theory, low-dimensional topology, class field theory, group representation theory, and dynamical systems. This is a capstone course in mathematics.
Staff/Offered periodically

212 NUMERICAL ANALYSIS/Lecture

Addresses the needs of students in mathematics and the sciences who are planning to do scientific computing. The goal of the course is to teach students how to set up reasonable computational algorithms and then to use the algorithms to work on actual projects. Topics covered include approximation theory, error analysis, numerical differentiation and integration, and solution of ordinary differential equations and linear systems. Prerequisites: Math 130 and Math 172.
Mr. Chou, Ms. Sternberg/Offered every other year

214 MODERN ANALYSIS/Lecture

Ideas introduced in Math 172 are developed further and applied to various scientific models. Topics include Hilbert spaces, Lp spaces, Fourier series, Weierstrass approximation theorems, and linear operators. Prerequisites: Math 130 and Math 172.
Mr. Chou, Ms. Sternberg/Offered every other year.

216 FUNCTIONS OF A COMPLEX VARIABLE/Lecture

Designed for undergraduate science majors as well as mathematics majors, this course includes Cauchy's theorem, power series, Laurent series, the residue theorem, harmonic functions, and physical applications, such as problems in two-dimensional flow. An introduction to Riemann surfaces if time permits. Prerequisite: Math 131 and Math 172.
Mr. Rudolph/Offered every other year

217 and 218 MATHEMATICAL STATISTICS I AND II/Lecture

Designed to introduce students to the theory and applications of probability and statistics. Techniques used to solve problems are stressed along with the associated mathematical theory. Among the topics covered are combinatorial methods, postu-

lates of probability, stochastic processes, probability densities, mathematical expectation, sampling distributions, estimation, hypothesis testing, regression, and correlation. The syllabus for this course includes most of the material recommended for those preparing for the second (F.S.A.) actuarial examination. Prerequisite: Math 131.
Ms. Vaskas/Offered every year

225 MODERN ALGEBRA I/Lecture

The concepts of abstract algebra are introduced through concrete problems from number theory. In the nineteenth century, Kummer realized that the unique factorization of integers into primes breaks down in certain rings of algebraic integers. To get around this difficulty, he invented "ideal numbers," which led to the modern theory of rings and ideals. This course discusses unique factorization and ideal theory in rings, with emphasis on Euclidean domains. Other algebraic structures, such as groups and fields, also are introduced. This course is required for all math majors. Prerequisite: *Linear Algebra*, Math 130. Students who took *Intermediate Calculus*, Math 130 before 1990, should consult the department.
Mr. Morris/Offered every year

226 MODERN ALGEBRA II/Lecture

Early in the nineteenth century, Abel showed that there is no general algebraic formula for the solution of an equation of degree 5 or more. In order to determine whether or not a given polynomial is solvable, Galois developed group theory. Today, group theory is indispensable in almost every branch of mathematics, as well as parts of physics and chemistry. The main focus in this course is group theory and Galois theory. Other possible topics include canonical forms of matrices and modules. Prerequisite: Math 225.
Mr. Morris/Offered every other year

228 TOPOLOGY/Lecture

Homology theory is the proper context for Stokes' theorem from Math 131. In this course, we continue the study (begun in Math 131 and Math 172) of the topological properties of subsets of Euclidean space, by developing algebraic tools such as homology and fundamental groups. Further topics may include fixed-point theory, the Jordan curve theorem, and knot theory--as time permits. Prerequisites: Math 131 and Math 172.
Mr. Morris, Mr. Rudolph/Offered every other year

244 DIFFERENTIAL EQUATIONS/Lecture

Most of the ordinary differential equations that occur in mathematical models of physical, chemical, and biological phenomena cannot be solved analytically. Numerical integrations do not lead to a desired result without qualitative analysis of the behavior of the equation's solutions. The goal of this course is to study the flow of scalar and planar ordinary differential equations. Stability and bifurcation are discussed. Prerequisite: Math 130 and Math 172.
Ms. Sternberg/Offered every other year

GRADUATE COURSES IN MATHEMATICS

The following courses are all offered periodically, on an independent basis. For further information, please consult the department.

300	*Set Theory*
316	*Functions of a Complex Variable*

318	*Functions of a Real Variable*
321	*Algebraic Topology*
325	*Advanced Modern Algebra*
326	*Selected Topics in Complex Analysis*
327	*Functional Analysis*
330	*Master's Thesis*
335	*Selected Topics in Algebra*
341	*Differential Equations*
358	*Category Theory*
376	*Representation Theory of Finite Groups*
381	*Seminar in Complex Variables*
382	*Seminar in Abstract Analysis*

COURSES IN COMPUTER SCIENCE

Courses in computer science are listed separately in this catalog under the heading Computer Science.

Neuroscience

PROGRAM FACULTY

Thomas A. Schoenfeld, Ph.D., Psychology and Biology, *program director*: developmental psychobiology/neurobiology, olfaction, neuroanatomy and behavior

John J. Brink, Ph.D., Biology and Chemistry: neurochemistry, nerve metabolism, myelin

Linda M. Kennedy, Ph.D., Biology and Psychology: neurophysiology, sensory neurobiology, taste receptors

Timothy A. Lyerla, Ph.D., Biology: neural development, genetic diseases

Donald J. Nelson, Ph.D., Chemistry and Biology: neurochemistry, receptors, proteins, and calmodulin

David A. Stevens, Ph.D., Psychology: taste and smell, psychophysics, learning

Marianne Wiser, Ph.D., Psychology: visual perception, cognitive development

AFFILIATED FACULTY

Ronald Cohen, Ph.D., University of Massachusetts Medical School

Craig Ferris, Ph.D., University of Massachusetts Medical School

NEUROSCIENCE PROGRAM

The 1990s have been declared by our federal government to be the "Decade of the Brain." This act recognizes the important strides neuroscientists around the world have made in recent years in unravelling the mysteries of the "great ravelled knot." It also underscores our country's dedication to an ongoing program of education and research designed to penetrate and illuminate what many consider to be the ultimate scientific frontier.

The Neuroscience Program at Clark brings focus to the interdisciplinary study of nervous systems, brain, and behavior. The faculty consists of members of the Clark Biology, Chemistry, and Psychology Departments and part-time affiliated neuroscientists from neighboring institutions. The program offers an undergraduate concentration within a biology or psychology major and a coordinated course of study emphasizing neuroscience leading to the M.A. and Ph.D. degrees within the departments of the various full-time neuroscience faculty members.

UNDERGRADUATE CONCENTRATION IN NEUROSCIENCE

An undergraduate student majoring in either biology or psychology may choose to concentrate in neuroscience. A concentrator's course of study begins with the core sequence *Neuroscience I and II* and then proceeds with the selection of more advanced courses that focus on the full range of topics in neuroscience–from molecules in nerve cells to behavior. The work for a neuroscience concentration culminates with a capstone research project with one of the full-time faculty members in the Neuroscience Program.

This program of study is particularly appropriate for students anticipating graduate work and careers in biological or psychological science as well as students planning to become physicians, nurses, clinical psychologists, veterinarians, dentists, occupational therapists, or other health professionals. The interdisciplinary nature of the concentration also is an excellent way to focus broad interests in biology and psychology in the pursuit of a liberal education.

As early as possible (preferably in the first year), an interested student should contact the program director about the intention to concentrate in neuroscience. The director will help the student select an advisor from among the full-time neuroscience faculty–ideally, a person who also will become the student's major advisor. The advisor will help the student design and coordinate a plan of study tailored to his or her particular interests and goals.

REQUIREMENTS

A student wishing to concentrate in neuroscience must fulfill the following requirements:

1. Biol/Psych 140 and 141, *Neuroscience I and II*
2. Four additional courses from the Neuroscience Program offerings (see below)
3. A capstone research project of at least one year, preferably to be *started no later than the second semester of the junior year, receiving course credit as* Directed Research, Honors *or another form of independent study. (This project must be under the direction of a full-time neuroscience faculty member who need not be the student's advisor.)*
4. One year of organic chemistry, one year of physics, and at least one *year of statistics and mathematics, the latter selected as Psych 105 (*Quantitative Methods*) or Biol 280 (*Biostatistics and Computer Applications*) plus Math 120 (*Introduction to Calculus I*).*

Though not required, neuroscience concentrators also are strongly encouraged to take courses in computer science and philosophy, particularly *Medical Ethics*, *Philosophy of Science*, and *Philosophy of Mind*.

A concentrator also must meet the requirements of his/her chosen major (biology or psychology), as outlined elsewhere in this catalog.

COURSES

The following courses may be used to fulfill requirements for the concentration in neuroscience. All are cross-listed in the Departments of Biology and/or Psychology.

Neuroscience I and II are prerequisites for some but not all courses. Additional information on these or other courses now being developed may be obtained from individual professors within the program or from the program director.

140 NEUROSCIENCE I

Refer to course description under Biology or Psychology 140.
Ms. Kennedy, Mr. Schoenfeld/Offered every year

141 NEUROSCIENCE II

Refer to course description under Biology or Psychology 141.
Mr. Schoenfeld, Ms. Kennedy/Offered every year

142 SENSATION AND PERCEPTION

Refer to course description under Psychology 142.
Ms. Wiser/Offered every year

205 LABORATORY IN TASTE AND SMELL

Refer to course description under Psychology 205.
Mr. Stevens/Offered every year

214 LABORATORY IN PSYCHOBIOLOGY

Refer to course description under Psychology 214.
Mr. Schoenfeld/Offered every other year

247 SEMINAR IN NEUROPHYSIOLOGY

Refer to course description under Biology 247.
Ms. Kennedy/Offered every other year

261 HUMAN NEUROPSYCHOLOGY I and II

Refer to course description under Psychology 261.
Boston V.A. Hospital Staff/Offered every year

263 PERCEPTUAL DEVELOPMENT

Refer to course description under Psychology 263.
Ms. Wiser/Offered every other year

273 NEUROCHEMISTRY

Refer to course description under Biology 273.
Mr. Brink/Offered every other year

274 DEVELOPMENTAL PSYCHOBIOLOGY

Refer to course description under Biology or Psychology 274.
Mr. Schoenfeld/Offered every third year

287 SELECTED PROBLEMS IN PSYCHOBIOLOGY

Refer to course description under Psychology 287.
Staff/Offered periodically

292 COGNITIVE NEUROSCIENCE

Refer to course description under Biology or Psychology 292.
Staff/Offered every year

293 MOLECULAR NEUROPHARMACOLOGY
Refer to course description under Biology 293.
Mr. Brink/Offered every other year

294 NEUROANATOMY AND BEHAVIOR
Refer to course description under Biology or Psychology 294.
Mr. Schoenfeld/Offered every third year

295 NEUROENDOCRINE MECHANISMS OF BEHAVIOR
Refer to course description under Biology or Psychology 295.
Staff/Offered every year

Music

See Department of Visual and Performing Arts.

Peace Studies

PROGRAM FACULTY

Joseph H. deRivera, Ph.D., *program director:* emotions, social psychology and the prevention of war

Patrick G. Derr, Ph.D.: ethics, philosophy of science, hazards management

Cynthia Enloe, Ph.D.: women and politics, militarization, comparative politics

George Lane, M.A.: U.S. foreign policy, arms control, Middle East history and politics

Douglas J. Little, Ph.D.: U.S. diplomatic history, America since 1900, modern Latin America, Middle East

Harold T. Moody, Ph.D.: market structures and strategies; services in nonprofit, profit, and governmental organizations

Ortwin Renn, Ph.D.: decision analysis, conflict resolution, risk analysis, E.T.S.

Robert J. Ross, Ph.D.: urban political economy, political sociology, social movements

Ann Seidman, Ph.D.: international division of labor, South Africa

Zenovia A. Sochor, Ph.D.: Soviet Union, comparative politics

Marc W. Steinberg, Ph.D.: historical sociology, social movements, political and social theory, culture

Shelly Tenenbaum, Ph.D.: race and ethnicity, Holocaust studies, social stratification

Barbara P. Thomas-Slayter, Ph.D.: rural organization, women and public policy, peasant behavior

Robert Vitalis, Ph.D.: international relations, political economy, Middle East politics

Theodore H. Von Laue, Ph.D. (emeritus): global perspectives in history

Walter E. Wright, Ph.D.: ethics, philosophy of religion

PROGRAM AND CONCENTRATION

The Peace Studies Program is concerned with analyzing and transforming individual behavior, national policy, and human institutions in order to promote peace and justice in the world. The program promotes discussion and study on issues of conflict and its management, citizen responsibility, cross-cultural understanding, environmental protection, human rights, international security, social justice, and the building of community. In addition, the program sponsors research, public service, and forums on peace and international issues.

Undergraduates may concentrate in peace studies to complement any major. "Peace Studies Concentration" will appear on the student's final transcript. Interested students may also design a major in peace studies via the University's self-designed major. The concentration draws together the knowledge of several disciplines in the context of the search for peace, while enhancing students' critical thinking skills and awareness of the connections between local and global issues. Departments and programs represented in peace studies include E.T.S., government, history, international development, psychology, and sociology.

Course work, research, and internships enable students to apply their theoretical understanding of the issues of peace to practical situations. Students with a concentration in peace studies are prepared to enter careers and graduate study in such fields as public policy, international development, labor relations, environment and ecology, and international relations. They join the "critical mass" of informed citizens who are prepared to take an active role in shaping constructive policies in the public sector and civil society.

The Peace Studies Office provides information on internships; jobs and careers; a library; and PeaceNet, a computer link to international conferences and bulletin boards.

REQUIREMENTS

Students who wish to concentrate in peace studies take 170 *Introduction to Peace Studies* and at least one course in each of the fields of international and regional conflict, social and environmental justice, citizen action, and pluralism and community. In addition, students must take either an internship, or a directed reading, research or capstone course (bringing the minimum number of courses required for the concentration to six).

COURSES

The following is a partial list of Clark's peace studies course offerings. Students may petition the Peace Studies Committee to receive concentration credit for courses other than those listed below. More information can be obtained from participating faculty or from the Peace Studies Office, Jonas Clark Hall, Room 319, (508) 793-7663.

170 INTRODUCTION TO PEACE STUDIES

An examination of love, fear, conflict, and other basic processes involved in group dynamics, interpersonal relations, community psychology, intergroup relations,

organizational behavior, and the interface between human nature and culture. The basic processes are related to the choices that govern the attempt to achieve a world of peace and justice. Students are asked to apply their knowledge of basic processes by undertaking two moral actions. The first of these is on a direct personal level and deals with the ability to assert oneself, to accept others, and to take risks. The second involves field experience in dealing with the problems posed by our memberships in a world community: the reduction of hunger, poverty, and prejudice; environmental degradation; nuclear and conventional arms proliferation; and the securing of human rights.
Mr. deRivera/Offered every year

INTERNATIONAL AND REGIONAL CONFLICT COURSES

173 POLITICS OF WAR AND PEACE

Refer to course description under Government 173.
Staff/Offered periodically

234 SEMINAR: ARMS CONTROL

Refer to course description under Government 234.
Mr. Lane/Offered every year

287 THE UNITED STATES AND THE NEW EUROPE

Refer to course description under Government 287.
Mr. Lane/Offered every year

SOCIAL AND ENVIRONMENTAL JUSTICE COURSES

125 DEVELOPMENT PROBLEMS

Refer to course description under International Development 125.
Ms. Thomas-Slayter/Offered every year

160 CONFLICT RESOLUTION

Refer to course description under Environment, Technology, and Society 160.
Mr. Renn/Offered periodically

248 SEMINAR IN GLOBAL CAPITALISM

Refer to course description under Sociology 248.
Mr. Ross/Offered every year

CITIZEN ACTION COURSES

050 LOCAL ACTION, GLOBAL CHANGE

Refer to course description under International Development 050.
Mr. Ford and Ms. Thomas-Slayter/Offered every year

265 SOCIAL MOVEMENTS

Refer to course description under Sociology 265.
Mr. Steinberg, Mr. Ross, Staff/Offered every year

PLURALISM AND COMMUNITY COURSES

204 THE HOLOCAUST: A STUDY OF GENOCIDE

Refer to course description under Sociology 204.
Ms. Tenenbaum/Offered every year

228 COMPARATIVE POLITICS OF RACE, ETHNICITY, AND GENDER

Refer to course description under Government 228.
Ms. Enloe/Offered every other year

252 RACE AND AMERICAN SOCIETY

Refer to course description under Sociology 252.
Ms. Tenenbaum/Offered every year

INTERNSHIPS, DIRECTED READINGS, RESEARCH AND CAPSTONE COURSES

285 CAPSTONE: SPECIAL TOPICS IN PEACE STUDIES

The content of this course varies. It may be taught in conjunction with a directed reading or with other peace studies courses. Topics include theories and techniques of conflict resolution; strategies and effectiveness of various interest groups working for peace; nonviolent resistance and other approaches to peacemaking; and the connection between interpersonal, intergroup, cultural, and international dimensions of conflict and peacemaking.
Staff/Offered periodically

299.9 PEACE STUDIES INTERNSHIP

Students concentrating in peace studies are encouraged to consider an internship for their sixth concentration requirement. Peace studies offers internships periodically in peer mediation, conflict resolution training, and other skills. The Peace Studies Office has information about internship opportunities with peace and justice organizations in Worcester, Boston, New York, Washington, D.C., and elsewhere.

Philosophy

DEPARTMENT FACULTY

Patrick G. Derr, Ph.D., *chair:* philosophy of science, biomedical ethics, history of modern European philosophy, ethical issues in hazards management

Judith W. DeCew, Ph.D.: philosophy of law, social and political philosophy, ethics, logic

Patricia Herzog, Ph.D.: philosophy of mind, philosophy of language, ethics, aesthetics

Gary E. Overvold, Ph.D.: contemporary continental philosophy, interdisciplinary studies, epistemology, cultural history

Michael Pakaluk, Ph.D.: ancient philosophy, analytic philosophy, Hume, philosophy of psychology, philosophy of love and friendship, logic

Christina Sommers, Ph.D.: history of ethics, feminist philosophy, contemporary moral theory, philosophy of literature

Walter E. Wright, Ph.D.: nineteenth-century philosophy, ethics, philosophy of religion, metaphysics, German idealism

ADJUNCT FACULTY

Bernard Kaplan, Ph.D., Professor of Psychology: philosophy of psychology

Edward Ottensmeyer, Ph.D., Associate Professor of Management: business ethics

AFFILIATE FACULTY

Barbara Carlson, C.Phil.: logic, rhetoric, critical thinking

Sydney Thomas, Ph.D.: epistemology, aesthetics, feminist philosophy, history of American philosophy

UNDERGRADUATE PROGRAM

The Philosophy Department offers an undergraduate major program in philosoph, a concentration in ethics and public policy, and a variety of elective courses for nonmajors.

The major program includes two tracks, a *Traditional Liberal Arts Track*, recommended for preprofessional students and for students completing a double major in philosophy and another discipline, and an *Intensive Honors Track*, recommended for honors students and for students considering graduate study for the Ph.D. in philosophy.

The *Concentration in Ethics and Public Policy* is not a major, but a concentration which can be taken in conjunction with a major in almost any department at Clark. It includes courses from all the University's divisions and nearly all of its departments. The concentration in ethics and public policy is particularly recommended to students who are majoring in other departments and intend to pursue professional or career interests in such fields as law, government, health care, or public administration.

Finally, the department offers a wide range of elective courses, which can be taken by students majoring in any other department to enhance their critical skills, broaden their intellectual perspectives, and fulfill college requirements (for example, PHIL 103, 105, 110, 132, 150). Some of these electives are specially designed to complement the studies of students in specific major or preprofessional programs (for example, PHIL 130, 133, 169, 241, 268, 270).

MAJOR REQUIREMENTS

The requirements for a major in philosophy are designed to ensure exposure to the major systematic fields within philosophy, to ensure familiarity with advanced analytic and logical methods, to acquaint the student with the history of the discipline, and to provide close faculty-student contacts within the context of advanced seminars and individual research projects. Within this general framework, undergraduates may select either the *Traditional Liberal Arts Track* (recommended for preprofessional students and students completing a double major in philosophy and another discipline); or the *Intensive Honors Track* (recommended for all honors and predoctoral students). Both tracks have specific requirements in Philosophy and in other departments.

Major Requirements in the Traditional Liberal Arts Track

1. Required courses in philosophy:
    - At least one course in formal logic (PHIL 110 or 160, or MATH 115)

- At least two courses in the history of philosophy (141, 143, or 145)
- At least one advanced course in the area of metaphysics
- At least one advanced course in the area of epistemology
- At least one advanced course in the area of ethics
- At least one advanced elective, chosen to complement the student's second major or intended professional field
- A designated *Capstone Seminar*

2. Required courses outside philosophy:
   Either: (i) a completed double major; or (ii) a completed concentration (e.g., E.T.S., ethics and public policy, women's studies, classics, ancient civilizations Judaic studies, or communications); or (iii) a set of six related courses, including four advanced courses, not necessarily from the same department, which form a coherent intellectual cluster.

Major Requirements in the Intensive Honors Track

1. Required courses in philosophy:
   - At least one course in formal logic (PHIL 110 or 160 or MATH 115)
   - At least three courses in the history of philosophy, including both 141 and 143 and either 145 or 154
   - At least one advanced metaphysics course (234 or 235)
   - At least one advanced epistemology course (240 or 241)
   - At least one advanced ethics course (220 or 228)
   - At least one advanced seminar devoted to the study of a single major philosopher (for example: 250, 251, 256, 257)
   - At least one advanced seminar devoted to the study of a major philosophical tradition (for example: 210, 211, 258, 265, 275)
   - *Teaching Assistantship* (203)
   - *Research Apprenticeship* or *Directed Research* (296, 2991 or 2992)
   - *Thesis* (299.8)
2. Required courses outside philosophy:
   - Reading competence in a foreign language (usually Greek, Latin, German, or French) as demonstrated by earned grades of B- or better in a full-year college language course or by other suitable evidence.

CONCENTRATION IN ETHICS AND PUBLIC POLICY

The *Concentration in Ethics and Public Policy* is neither a department nor a major but a *concentration* which can be taken in conjunction with a major in almost any program or department at Clark. The concentration is administered by the Philosophy Department, but involves courses and faculty from more than a dozen departments. This concentration is particularly recommended to students who intend to pursue professional or career interests in policy-related fields such as law, government, public administration, or health care.

CONCENTRATION REQUIREMENTS

The requirements for a concentration in ethics and public policy are designed to familiarize the student with the *basic concepts and methods* of both *ethical analysis* and *policy analysis*; to introduce the *theoretical and methodological problems* of both *ethical analysis* and *policy analysis*; and to ensure that the student engages in sustained analysis of *particular ethical and public policy issues* at both an introductory and an advanced level.

At a minimum, the concentration in ethics and public policy requires seven courses, distributed in the following manner:

1. Three courses in ethics
    - At least one introductory course focused on the *basic concepts and methods of ethical analysis*. For example: PHIL 105, *Personal Values*; PHIL 132, *Social and Political Ethics;* or HEBR 127, *Modern Jewish Ethics*
    - At least two advanced courses focused on *theoretical and methodological problems of ethical analysis*. For example: PHIL 220, *History of Ethics;* PHIL 221, *Social and Political Philosophy;* PHIL 228, *Contemporary Moral Theory; or PHIL 270, Philosophy of Law*
2. Two courses in public policy analysis
    - At least one introductory course focused on the *basic concepts and methods of policy analysis*. For example: ETS 101, *Introductory Case Studies;* GOVT 154, *The Politics of Public Policy;* ETS 160, *Conflict Resolution*
    - At least one advanced course focused on *theoretical and methodological problems of policy analysis*. For example: ETS 175, *Science, Decision Making, and Uncertainty;* ETS 250, *Technology Assessment;* ETS 270, *Decision Analysis for Environmental Management;* GEOG 246, *Technology Assessment*; GOVT 203, *Applications of Game Theory*; GOVT 213, *Policy Analysis*; or SOC 246, *Social Planning and Social Policy*
3. Two courses (including one in philosophy) on applications and problems
    - At least one introductory course focused on *particular ethical and public policy issues*. For example: ECON 155, *Economics of Natural Resources and the Environment;* EDUC 155, *Education and Social Policy;* ETS 182, *People, Politics, and Pollution;* ETS 130, *Energy Systems;* GEOG 125, *Development Problems*; GOVT 157, *The Politics of Environmental Issues;* GOVT 173, *Politics of War and Peace*; IDSC 108, *World Population;* MGMT 262, *Business Ethics*; PHIL 130, *Medical Ethics;* PHIL 136, *Legal Ethics;*
    - At least one course devoted to the *intensive analysis of particular ethical and public policy issues*. For example: BIOL 238, *Issues in Public Health*; ECON 216, *Tax Systems and Policies;* ECON 235, *Economics of Housing;* ETS 210, *Environment and Society*; ETS 251, *Limits of the Earth;* ETS 252, *Locating Hazardous Facilities*; GEOG 210, *Environment and Society;* GEOG 293, *Overcoming World Hunger;* GOVT 221, *Public Policies and American Cities;* GOVT 223, *Suburban Policy Issues;* GOVT 282, *Housing Policies;* IDSC 232, *Social Justice and Development*; IDSC 288, *Disease and Health Services in the Third World;* PHIL 213, *Politics and Human Nature;* PHIL 272, *Advanced Issues in Medical Ethics*; PHIL 273, *AIDS: Ethics and Public Policy.*

DIRECTED READINGS, INDIVIDUAL RESEARCH

For students who are motivated to undertake significant independent research, the department offers a *Research Apprenticeship Program* (PHIL 296), individual *Directed Research* (PHIL 2992), *Directed Readings* (PHIL 2991) courses, and a variety of *Advanced Topics in Philosophy* courses (PHIL 297). Students interested in these possibilities should consult with individual members of the philosophy faculty.

INTERNSHIPS

Philosophy faculty are available to sponsor a variety of undergraduate internship experiences, often with medical or legal professionals with whom they have a consulting or research relationship. Students interested in these opportunities may inquire at the department or through the internship office.

SENIOR THESIS

All undergraduate majors are encouraged to complete a senior thesis (PHIL 2998); majors in the intensive track are required to do so. Thesis students engage in advanced individual research on a selected philosophical problem, guided by a faculty advisor and a thesis committee composed of three faculty. The prerequisites, which should be completed by the end of the student's junior year, are: (1) at least six courses in philosophy; and (2) submission and approval of a thesis proposal. The thesis proposal must describe the nature and scope of the proposed project, provide a bibliography of the principal sources the student expects to use, include a schedule for submission of first and final drafts to the advisor and the committee, and be signed by the student's thesis advisor. An excellent thesis is characterized by scholarly quality, not by length or bulk. Upon completion of the thesis, the department faculty schedules an oral defense for the student. Completion of a thesis is a requirement for departmental honors.

HONORS PROGRAM

Honors, high honors, or highest honors in philosophy may be conferred at graduation upon majors who, in addition to having compiled a suitable record in the intensive major track, successfully defend their senior thesis in an oral presentation to their thesis committee. At the department's discretion, honors or high honors may occasionally be conferred at graduation upon majors who, in addition to having compiled a superior record in the traditional major track, complete a senior thesis and successfully defend it in an oral presentation to their thesis committee.

DEPARTMENT PRIZES AND AWARDS

Each year, the department inducts its best junior and senior philosophy majors into *Phi Sigma Tau*, the national philosophical honor society. At the spring honors convocation, the department awards one or more prizes to its most exemplary graduating seniors. And at the fall convocation, the department confers a special prize for the best work in logic by a first- or second-year student.

INSTITUTES AND LIBRARIES

The Clark University Department of Philosophy houses the New England Chapter of the Society for Philosophy and Public Affairs (S.P.P.A.). This is a national organization that works to promote the application of philosophical methods and insights to the consideration of such public issues as medical ethics, criminal justice, civil disobedience, pornography and censorship, economic justice, and affirmative action. The society sponsors frequent colloquia, symposia, and conferences on public policy issues. Inquiries concerning its activities may be directed to the department.

DEPARTMENTAL PUBLICATIONS

The international philosophical journal, *Idealistic Studies*, is edited by Walter Wright with the assistance of the other faculty of the Department of Philosophy. Founded by Robert N. Beck, *Idealistic Studies* has become one of the world's leading professional journals for the discussion and analysis of themes and problems arising within the context of the idealist tradition in philosophy.

THE PHILOSOPHY CLUB

Students interested in philosophy and philosophical dialogue, whether majors in the department or not, are invited to join the Philosophy Club. This student-led organization meets regularly with invited speakers and faculty to discuss topics chosen by its members. Information on the club is available from the department.

THE UNDERGRADUATE HANDBOOK

Students who want more information about the courses, programs, and faculty of the Philosophy Department are invited to pick up a copy of the handbook, *A Student's Guide to Philosophy at Clark*, which is available in the department office.

COURSE NUMBERS AND LEVELS

100-119	Introductory courses for all students; no prerequisites.
120-129	Special first-year seminars; for first year students only.
130-139	Courses in applied ethics for all students; no prerequisites.
140-149	Survey courses in the history of philosophy; usually no prerequisites.
150-199	Intermediate courses in various areas of philosophy; usually one prerequisite.
200-209	Surseminars offered on an individual basis to students working as teaching assistants, editorial assistants, etc.; usually several prerequisites.
210-214	Intermediate level interdisciplinary seminars; one or two prerequisites.
215-219	Advanced courses in systematic and historical areas of philosophy; two prerequisites.
220-229	Advanced courses in systematic ethics; two prerequisites.
230-239	Advanced courses in systematic metaphysics; two prerequisites.
240-249	Advanced courses in systematic epistemology; two prerequisites.
250-289	Seminars on individual philosophers or philosophical issues; two or more prerequisites.
290-299	Advanced topics; individual research; senior thesis; and other small, intensive courses in philosophy; four to six prerequisites.

INTRODUCTORY COURSES

102 INTRODUCTION TO PHILOSOPHY/Lecture, Discussion

Introductory study of typical problems drawn from philosophy's main branches. Topics often include God's existence, the nature of morality, skepticism, freedom vs. determinism, immortality, and political theory. Readings are taken from both classic and contemporary sources.
Mr. Overvold, Mr. Wright, Mr. Derr, Mr. Pakaluk/Offered every semester

103 ANALYTIC REASONING/Lecture, Discussion

Major emphasis is given to the analysis of argumentative essays (drawn from newspapers, philosophical works, legal journals, and popular magazines) on such topics as affirmative action, the problem of evil, the nature of law, scientific method, etc. The class analyzes the material with an eye to its cogency and persuasiveness, identifying its premises and conclusions, assumptions and implications. The course helps students to read, write, and think in a more analytical and critical manner.
Ms. Carlson/Offered every semester

105 PERSONAL VALUES/Lecture, Discussion

A philosophical study of some fundamental human problems: Is there a God? Why should we be moral? Should we permit or choose abortion, mercy killing, or suicide? Do communities have a right to ban pornography? What moral duties do children have toward their parents? Can civil disobedience, war, or terrorism be morally justified? What moral issues are at stake in truthfulness, sexual integrity, and love? The students learn some important moral theories and the methods used to reason philosophically about moral questions.
Ms. Thomas, Ms. DeCew, Ms. Herzog, Ms. Sommers/Offered every semester

110 INTRODUCTION TO LOGIC/Lecture, Discussion

An introduction to logic as both a practical skill and a branch of philosophy. The student is introduced to the principles, methods, and philosophical foundations of logical reasoning, with special attention to symbolic technique.
Mr. Pakaluk, Ms. DeCew/Offered every semester

INTERMEDIATE COURSES

130 MEDICAL ETHICS/Lecture, Discussion

An investigation of contemporary issues in medical ethics: informed consent, definitions of death, treatment termination and euthanasia, abortion, confidentiality and truth telling, genetic screening and counseling, research on human subjects, resource allocation, reproductive technologies, conflicts of interest, and national health policy. Cross-listed as ETS 131. Not open to first-year students.
Mr. Derr/Offered every semester

132 SOCIAL AND POLITICAL ETHICS/Lecture, Discussion

Topics in social and political theory, such as equality, liberty, and justifications for political authority, as well as issues such as: What is affirmative action, and can it be morally justified? Should governments censor pornography? Is capital punishment acceptable? Can war be justified? Should morality be legislated? Should anything else be legislated?
Ms. DeCew, Ms. Thomas/Offered every semester

133 BUSINESS ETHICS/Lecture, Discussion

Investigates moral problems in and about the world of business: Do corporations have moral responsibilities, or is their only social responsibility to increase profits? Is capitalism morally justifiable, or is some other politico-economic system morally preferable? The course also discusses ethical issues in advertising, affirmative action, and business's responsibilities toward the environment.
Mr. Ottensmeyer, Ms. Sommers/Offered every year

136 LEGAL ETHICS/Lecture, Discussion

Considers a variety of ethical problems that arise within and about the legal system: the relation between law and morality, the social responsibility of lawyers and judges, the justifiability of judicial activism, the morality of the insanity defense, and issues in professional ethics (such as lawyer-client confidentiality).
Ms. DeCew/Offered periodically

139 WOMEN AND PHILOSOPHY/Lecture, Discussion

Attention is given to the prevalent images of women in the history of Western

philosophical thinking, including glimmerings of feminism in Mill, Wollstonecraft, and others. The course also looks at issues in contemporary philosophy that particularly affect women, including debates about sexual differences, the meaning of liberation, and the status of feminism as a social ideal.
Ms. Sommers, Ms. Thomas/Offered every other year

141 HISTORY OF ANCIENT PHILOSOPHY/Lecture, Discussion
Examines the origins of Western thought in early Greek philosophy. Readings include the fragments of the pre-Socratic philosophers; the *Apology, Phaedo, Gorgias,* and *Republic* of Plato; and selections from the *Organon, De Anima, Physics, Metaphysics,* and *Ethics* of Aristotle.
Mr. Pakaluk/Offered every year

142 HISTORY OF MEDIEVAL PHILOSOPHY/Lecture, Discussion
A survey of medieval philosophy with special attention to some of the philosophical texts that were pivotal to the later development of Western philosophy and culture. These include Augustine's *Confessions*, Boethius's *Consolation of Philosophy*, Aquinas's *Summa Theologica*, and Maimonides' *Guide for the Perplexed*.
Mr. Pakaluk/Offered periodically

143 HISTORY OF MODERN PHILOSOPHY/Lecture, Discussion
The two great movements in modern Western thought—Continental rationalism and British empiricism—are examined from their common origin in Descartes, through their later articulations by Locke, Berkeley, Spinoza, Leibniz, and Hume, to their eventual transformation by Immanuel Kant. Particular emphasis is given to the interaction of philosophy and science and to the powerful influence exerted by the modern European thinkers upon contemporary thought.
Mr. Derr/Offered every year

145 HISTORY OF CONTEMPORARY PHILOSOPHY/Lecture, Discussion
A survey of the major trends in twentieth century Anglo-American and Continental philosophy: pragmatism, logical positivism, ordinary language philosophy, phenomenology, and hermeneutics. Each alternative is considered as a coherent perspective on experience, with special attention given to its style and methodology. Prerequisite: one course in philosophy (PHIL 143 is recommended).
Mr. Overvold/Offered every year

148 HISTORY OF AMERICAN PHILOSOPHY/Lecture, Discussion
Pragmatism was the first indigenous American philosophical movement and continues to influence philosophical thought in America today. This course concentrates on the founders of pragmatism —Pierce, James, and Dewey—and explores their influence on later pragmatists—Lewis, Quine, and Rorty. Prerequisite: one course in philosophy.
Ms. Thomas/Offered periodically

150 PHILOSOPHY OF RELIGION/Lecture, Discussion
Considers the nature of religion as revealed by the examination of religious experience. Emphasis is given to the effect of contemporary knowledge on our understanding of religion. Prerequisite: one course in philosophy.
Mr. Wright/Offered every year

154 RECENT EUROPEAN PHILOSOPHY/Lecture, Discussion

Introduces four contemporary European philosophical movements: hermeneutics, deconstructionism, critical theory, and structuralism. Prerequisite: one course in philosophy or permission of instructor.
Mr. Overvold/Offered every other year

160 INTERMEDIATE LOGIC/Lecture, Discussion

Emphasis is on formal principles of deductive rigor with some consideration of the philosophical implications of logic. Topics include advanced quantificational logic, elementary modal logic, selected metatheorems, and applications of logic to philosophical argument. Prerequisite: PHIL 110 or MATH 115.
Mr. Pakaluk, Mr. Wright/Offered every year

167 MYTH, RELIGION, AND ART/Lecture, Discussion

Among living beings, only humans appear to think symbolically. Our myths, religious beliefs, and art works symbolize our deepest fears and our most profound aspirations. This course explores the function of symbols in religious, mythic and artistic expression and looks for levels and meaning and insight common to all three. The views of Langer and Campbell receive special attention.
Ms. Thomas/Offered every other year

169 AESTHETICS/Lecture, Discussion

Why did Plato condemn poets and their work? Can art be neatly defined? Is art "imitation," "emotion," "relations of forms," or is it indefinable? Are their standards of beauty? Among the theories we consider are those of Aristotle, Tolstoy, Collingwood, Danto, Dickie, and Kant. Prerequisite: one course in philosophy.
Ms. Thomas/Offered every other year

ADVANCED COURSES

203 SURSEMINAR: TEACHING PHILOSOPHY/Seminar

Registration is limited to students working as discussion group leaders in Philosophy 102, 105, 110, 130 or 132. Variable credit.
Mr. Derr, Ms. DeCew, Mr. Pakaluk, Ms. Thomas, Ms. Sommers/Offered every semester

207 SURSEMINAR: PHILOSOPHICAL JOURNALS/Individual Project

An introduction to the process of scholarly journal production through work on the international philosophical journal, *Idealistic Studies.* Variable credit.
Mr. Wright/Offered every semester

210 MODERNISM IN PHILOSOPHY, LITERATURE, AND THE ARTS/Lecture, Discussion

Between approximately 1890 and 1930, virtually all the forms of inquiry and artistic expression in Western culture went through radical, foundational transformation. Using representative texts from the humanities and the arts, this course examines the Modernist transformation in its historical, cultural, and thematic context. Prerequisite: two courses in philosophy plus courses in related areas.
Mr. Overvold/Offered periodically

211 EXISTENTIALISM IN PHILOSOPHY, LITERATURE AND ART/ Lecture, Discussion

This interdisciplinary course explores central existential themes–such as the meaning of life, freedom and responsibility, the role of the irrational in human thought, action and expression, and the "death of God"–in their historical, cultural, and thematic context, using a multidisciplinary perspective to integrate topics in related areas of inquiry and expression. Existentialism is treated as both a postwar cultural event and a view of life's meaning and possibilities. Prerequisite: two courses in philosophy plus courses in related areas.
Mr. Overvold/Offered periodically

212 PHILOSOPHY AND THE HUMAN SCIENCES/Lecture, Discussion

Using texts from both the humanities and the social sciences, this course examines central philosophical themes in the human sciences–rationality; action, choice and character; human nature; the other, self, and society; explanation and human action–in their historical, cultural, and thematic context. The course also considers the status and methods of the "human sciences" and philosophy's place among and relationship to them. Prerequisite: two courses in philosophy plus courses in related areas.
Mr. Overvold/Offered periodically

213 POLITICS AND HUMAN NATURE

Several influential philosophers have believed that human beings can be changed in radical ways to render them fit citizens of a more perfect society. What are the actual consequences of such attempts at utopian social engineering? We read from Plato, the utopian socialists, and Karl Marx, as well as short selections from revolutionary theorists such as Joseph Stalin, Franz Fanon, and Mao Tse-tung. We also consider the philosophical writings of some well-known critics of utopian revolutionary theory–Edmund Burke, Karl Popper, and Czeslaw Milosz. Special attention is given to literary and biographical works that concern the fate of the individual in a totalitarian state. These works include George Orwell's *1984* and *Animal Farm*, Arthur Koestler's *Darkness at Noon*, Milan Kundera's *Book of Laughter and Forgetting*, and *Life and Death in Shanghai* by Nien Cheng or *Bread and Wine* by Ignazio Silone. Prerequisite: two courses in philosophy.
Ms. Sommers/Offered every other year

215 KANT AND THE NINETEENTH CENTURY/Lecture, Discussion

Examines the work of Kant and selected later philosophers (Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels, and Comte) with a special emphasis on their influence on contemporary thought. Prerequisite: two courses in philosophy, preferably including Philosophy 143.
Mr. Wright/Offered every other year

219 FEMINIST THEORY/Lecture, Discussion

The course surveys the major variations of contemporary feminist theory. Liberal, Marxist, socialist, radical, and postmodern feminism are all considered, as is the criticism of these theories. Special attention is given to feminist challenges to traditional moral and epistemological theories. Topics and authors studied vary each year. Prerequisite: two courses in philosophy or permission of the instructor.
Ms. Sommers/Offered every other year

220 HISTORY OF ETHICS/Lecture, Discussion

Examines the principal ethical theories from the history of Western philosophy, including the answers given by philosophers such as Plato, Aristotle, Epicurus, St. Thomas Aquinas, Hobbes, Hume, Kant, Ross, Rawls, and Mill to the questions: What is "the Good"? How can it be realized in society and in one's personal life? Are there other standards of right conduct? Are moral judgments objective? Why should we be moral? Prerequisite: two courses in philosophy.
Ms. DeCew, Ms. Sommers/Offered every year

221 SOCIAL AND POLITICAL PHILOSOPHY/Lecture, Discussion

Surveys the leading philosophical accounts of social and political institutions, including social contract theory, anarchism, socialism, democratic capitalism, and communism. Property, civil and natural rights, freedom and obligations, and the legitimation of political authority are treated in detail. Readings include both classical and contemporary sources. Prerequisite: two courses in philosophy.
Ms. DeCew/Offered every other year

228 CONTEMPORARY MORAL THEORY/Lecture, Discussion

A survey of recent work in moral theory (including both metaethical and normative issues) by leading Anglo-American philosophers. Prerequisite: two courses in philosophy.
Ms. DeCew, Ms. Sommers/Offered every other year

234 METAPHYSICS/Lecture, Discussion

An advanced survey of fundamental problems in metaphysics: universals, substance, the mind/body relation, category theory, identity and individuation, free will, and the nature of space and time. Prerequisite: two courses in philosophy.
Ms. DeCew, Mr. Pakaluk, Mr. Wright/Offered every year

235 CONCEPTS OF SELF/Lecture, Discussion

Considers the various philosophical concepts of the "self" that have been developed by classic and contemporary philosophers. Typical thinkers whose views may be covered include Aristotle, Plato, Descartes, Kant, Heidegger, Sartre, Kierkegaard, Strawson, and Stevenson. Prerequisite: two courses in philosophy.
Mr. Wright/Offered every year

240 EPISTEMOLOGY/Lecture, Discussion

The study of the nature and sources of knowledge, with special attention to the interrelationships among belief, knowledge, evidence, proof, truth, and the problem of skepticism. Prerequisite: two courses in philosophy.
Mr. Overvold, Ms. Thomas/Offered every year

241 PHILOSOPHY OF SCIENCE/Lecture, Discussion

Examines such questions as: What is a scientific explanation? Can induction be justified? What could justify the claim that one theory is better than another? Are there such things as objective "facts"? Do scientific theories disclose the ultimate constituents of the universe? What is the difference between science and pseudo-science? Special attention is given to the views of Hempel, Popper, Kuhn, Lakatos, Feyerabend, and Hesse. Prerequisite: four courses in natural sciences or two courses in philosophy.
Mr. Derr/Offered every other year

242 PHILOSOPHY OF LANGUAGE/Lecture, Discussion
An analysis of the concepts of reference, meaning, analyticity, intentionality, intensionality, rules, and the relation of language to thought. Particular attention is given to speech act theory (Austin, Grice, Strawson, Searle) and to the implications of language theory for the social sciences (Ricoeur, Louch). Prerequisite: two courses in philosophy.
Ms. Herzog/Offered periodically

250 PLATO/Seminar
A detailed and advanced study of the philosophical thought of Plato. The seminar involves careful reading and discussion of one of the major dialogues (such as the *Parmenides, Sophist*, or *Theaetetus*. Prerequisite: Philosophy 141.
Mr. Pakaluk/Offered every other year

251 ARISTOTLE/Seminar
A detailed and advanced study of the philosophical thought of Aristotle. The seminar involves careful reading and discussion of one of the major works, such as the *De Anima, Physics, Metaphysics,* and *Nicomachean Ethics.* Prerequisite: Philosophy 141.
Mr. Pakaluk/Offered every other year

256 KANT/Seminar
Students are introduced to Kant's *Critique of Pure Reason*–regarded by many as the most important philosophical text of the last several hundred years. Prerequisite: two courses in philosophy, including 143.
Mr. Wright/Offered periodically

257 HEGEL/Seminar
Hegel's *The Phenomenology of Mind* and selections from his other works. Prerequisite: at least two courses in philosophy, preferably including 143.
Mr. Wright/Offered periodically

258 THE ORIGINS OF ANALYTIC PHILOSOPHY/Seminar
An examination of the development of analytic philosophy through an intensive study of its three founding figures: Gottlob Frege, Bertrand Russell, and Ludwig Wittgenstein. Readings include Frege's *Foundations of Arithmetic,* Russell's *Mysticism and Logic,* and Wittgenstein's *Tractatus Logico-Philosophicus.* Prerequisite: two courses in philosophy, including 110 or 160.
Mr. Pakaluk/Offered periodically

260 KIERKEGAARD AND NIETZSCHE/Seminar
A study of Kierkegaard and Nietzsche as seminal figures in nineteenth-century intellectual life and as sources of later twentieth-century philosophical developments. Particular attention is given to their views of human existence and of truth. Prerequisite: two courses in philosophy.
Mr. Overvold/Offered periodically

263 PHILOSOPHY OF MIND/Seminar
A critical examination of the "nature" or concept of mind. Related issues considered are: mind/body relationship, the identity theory of mind/brain, the thesis of dualism, and other themes that involve the philosophical examination of psychological phenomena. Prerequisite: two courses in philosophy.
Ms. Herzog, Mr. Pakaluk/Offered periodically

265 IDEALISM/Seminar

Detailed and advanced study of the major idealistic philosophers including: an investigation of traditional arguments for idealism, the major metaphysical and epistemological theories held by idealists, and the relevance of idealism to the contemporary scene. Course topics and texts vary from year to year.
Mr. Wright/Offered every other year

270 PHILOSOPHY OF LAW/Seminar

Examines fundamental questions in philosophy of law, such as: Is law "natural," "God-given," or "an artificial contrivance of man"? What is the purpose of law? What is the nature of judicial reasoning, and is it subjective or governed by some set of principles? How do alternative theories of law explain rights, duties, liability, responsibility, and so forth? What is the relationship between liberty, privacy, and justice? Prerequisite: two courses in philosophy.
Ms. DeCew/Offered every year

272 ADVANCED ISSUES IN MEDICAL ETHICS/Seminar

A rigorous investigation of two or three current controversies related to medicine, health policy, and ethics. Readings include original materials from the legal, medical, and philosophical literatures. Topics have included: surrogate motherhood, AIDS, xenogestation, and assisted suicide. Prerequisite: permission of the instructor.
Mr. Derr/Offered every other year

273 AIDS: ETHICS AND PUBLIC POLICY/Seminar

The HIV epidemic challenges not only our scientific and medical establishments, but our shared conceptions of social justice, professional fidelity, and interpersonal solidarity. This multidisciplinary seminar examines moral and policy questions related to: the care and treatment of HIV infected patients; the duties of health care professionals; public health policies; HIV in the criminal justice system; the blood product industry; AIDS education; insurance and insurability; equal employment opportunity and occupational health; biomedical research policies and priorities; cultural and institutional concepts of sexuality and eroticism; and other issues. Usually team-taught with faculty from biology and management. Prerequisite: permission.
Mr. Derr/Offered every year

275 PHENOMENOLOGY/Seminar

An intensive study of two representatives of contemporary phenomenology: Edmund Husserl and Maurice Merleau-Ponty. Some consideration is given to other major philosophers within the tradition and to the historical context of the phenomenological movement in general. Prerequisite: at least three courses in philosophy.
Mr. Overvold/Offered periodically

276 HEIDEGGER AND EARLY TWENTIETH-CENTURY PHILOSOPHY/Seminar

This seminar concentrates on Continental philosophy, treating Heidegger's philosophy as a synthesis of the issues of the early decades of this century. Attention also is given to the broader cultural context and to parallel changes in American and British philosophy during the early twentieth century. Prerequisite: at least three courses in philosophy.
Mr. Overvold/Offered periodically

280 HEIDEGGER AND WITTGENSTEIN/Seminar

The seminar concentrates on two of the most influential texts of twentieth-century philosophy: Heidegger's *Being and Time* and Wittgenstein's *Philosophical Investigations.* Prerequisite: two courses in philosophy.
Mr. Overvold/Offered periodically

287 PHILOSOPHY OF THE SOCIAL SCIENCES/Seminar

A critical and intensive survey of the four alternative accounts of explanation, social reality, and social science put forward by the neopositivist empiricists, the phenomenologists, the neo-Wittgensteinians, and the Continental hermeneuticists and critical theorists. Prerequisite: at least four courses in philosophy or graduate status in a social science.
Mr. Overvold/Offered every other year

296 RESEARCH APPRENTICESHIP/Individual Projects

A research apprentice participates in the current professional research of her or his faculty sponsor. Students accepted as apprentices need initiative, perseverance, and superior research and writing skills. Recent apprentices have worked on issues in medical ethics, ancient Greek philosophy, philosophy of law, and feminist theory. Prerequisite: at least four courses in philosophy, permission of the instructor, and approval of the department.
Ms. DeCew, Mr. Derr, Mr. Overvold, Mr. Pakaluk, Ms. Sommers, Mr. Wright/Offered every semester

297 ADVANCED TOPICS IN PHILOSOPHY/Individual Projects

Individual tutorials and supervised research on philosophical topics selected by the student and faculty sponsor. Prerequisite: at least four courses in philosophy and permission of instructor. Recent topics have included Thomistic philosophy, medieval Jewish philosophy, feminist theory, modal logic, philosophy and the Holocaust, and Kant's *Critique.*
Ms. DeCew, Mr. Derr, Ms. Herzog, Mr. Overvold, Mr. Pakaluk, Ms. Sommers, Ms. Thomas, Mr. Wright/Offered every semester

299.1 DIRECTED READINGS/Individual Projects

See description and prerequisites under *Major Requirements* above.
Ms. DeCew, Mr. Derr, Mr. Overvold, Mr. Pakaluk, Ms. Sommers, Ms. Thomas, Mr. Wright/Offered every semester

299.2 DIRECTED RESEARCH/Individual Projects

See description and prerequisites under *Major Requirements* above.
Ms. DeCew, Mr. Derr, Ms. Herzog, Mr. Overvold, Mr. Pakaluk, Ms. Sommers, Ms. Thomas, Mr. Wright/Offered every semester

299.8 SENIOR THESIS/Individual Projects

See description and prerequisites under *Major Requirements* above. Offered for one or two credits over one or two semesters.
Ms. DeCew, Mr. Derr, Mr. Overvold, Mr. Pakaluk, Ms. Sommers, Ms. Thomas, Mr. Wright/Offered every semester

Physics

DEPARTMENT FACULTY

Christopher P. Landee, Ph.D., *chair:* experimental condensed matter physics, magnetochemistry

Charles Agosta, Ph.D.: experimental condensed matter physics

S. Leslie Blatt, Ph.D.: experimental nuclear physics

John Davies, Ph.D.: theoretical plasma physics

Stanley Geschwind, Ph.D.: experimental condensed matter physics

Robert L. Goble, Ph.D.: technology assessment, atmospheric physics and turbulence

Harvey Gould, Ph.D.: theoretical condensed matter physics, computer simulation

Christoph Hohenemser, Ph.D.: technology assessment

Roger P. Kohin, Ph.D., *director,* 3-2 Engineering Program, *undergraduate advisor for physics:* experimental condensed matter physics

ADJUNCT FACULTY

Daeg S. Brenner, Ph.D., Chemistry

Alan A. Jones, Ph.D., Chemistry

AFFILIATE FACULTY

Michael Klein, Ph.D.

Edward L. O'Neill, Ph.D.

George Phillies, Ph.D.

EMERITI

Roy S. Andersen, Ph.D: history and philosophy of science

UNDERGRADUATE PROGRAM

Clark offers a major in physics, generally regarded as the most fundamental of the sciences and an important element of a liberal arts education. Introductory courses are designed both for students majoring in physics and for others who want a broad background in the fundamentals of physical principles, the observation of natural processes, the logic and nature of science, and the diverse applications of physics. Many courses are appropriate for undergraduates with little or no prior experience with physics or college-level mathematics. Courses of this type include:

1. *Scientific Perspective Courses.* Physics 102 and 106 and Astronomy 101and 102 are suitable for students with no background in college-level mathematics; these courses have no prerequisites and satisfy the *scientific perspective* requirement of the Program of Liberal Studies. Physics 111, 112, 115, 118 also satisfy the *scientific perspective* requirement but are intended for science majors.
2. *Introductory Laboratory Courses.* The department offers a variety of undergraduate laboratory-based courses with few or no prerequisites. Examples of these courses include Physics 115, 118, and 119 on computer simulation, optics, and electronics, respectively. These courses fulfill the physics laboratory requirement for premedical/predental students. Physics 111, 112, 113, and 114 have laboratory components.

3. *Introductory Physics Courses.* Prospective science majors are urged tobegin to study physics during their first or second years since understanding the natural sciences requires a knowledge of the basic principles of physics. The department offers two sequences of introductory courses. Physics 110.1 and 111 form a two-semester, noncalculus-based survey of physics appropriate for the majority of science majors; environment, technology, and society (E.T.S.) majors; and premedical/predental students. Physics 110.2, 112, and 113 form a three-semester survey of physics recommended for physics majors, as well as chemistry and mathematics majors. This 110.2, 112, 113 sequence covers mechanics, electricity and magnetism, quantum physics, and relativity in more depth than the 110.1, 111 sequence and thereby gives better preparation for advanced study. Physics 112 treats fewer of the topics covered in Physics 111 but offers greater depth. But because Physics 112 is less *comprehensive*, it should be followed by Physics 113.

Students desiring further information about physics offerings are invited to contact course instructors or the undergraduate physics advisor, Mr. Kohin.

THE MAJOR

A major program can be structured to meet the individual needs of students: graduate study in physics or engineering; or careers in management, environmental studies, government, law, medicine, and teaching. During the first year, prospective physics majors are urged to enroll in Physics 110.2 and 112 and to consult the undergraduate physics advisor about their individual programs of study. The requirements for a major in physics are fourteen courses of a common core curriculum and four additional approved courses in physics or related areas. The core curriculum, taken by all physics majors, encompasses mechanics, electricity and magnetism, quantum and thermal physics, and four semester courses in calculus. The requirements for the major are flexible and, through consultation with the undergraduate physics advisor, may be modified to satisfy the particular interests of each student. Examples of individual programs are:

General Physics—a program appropriate for students who wish to major in physics as part of liberal arts education, perhaps as preparation for a career in teaching or business.

Preprofessional Physics—a program of courses in physics, chemistry, and mathematics to prepare students for graduate study in physics or research in industry.

Biological Physics—a program including chemistry and biology courses that can be used as preparation for entrance to medical or dental schools or for careers in the biomedical professions.

Materials Science—a program of advanced courses in physics and chemistry designed to prepare students for graduate study in the interdisciplinary area of materials science.

Computational Physics—a program of advanced courses in physics, computer science, and mathematics designed to prepare students for graduate study in the rapidly growing area of computational science.

Technology Assessment—a program of interdisciplinary courses to enable students to make physical, economic, and value assessments of technological systems.

A student interested in using physics as the basis for an engineering career should inquire about the Clark *Three-two (3-2) Plan*, a program offering students a five-year option to combine a liberal arts (B.A.) degree from Clark and a B.S. in engineering from the College of Engineering and Applied Science at Columbia University.

Courses in the physics core curriculum include:	**Units**
• Introductory Physics: *Physics 110 as well as Physics 111 or 112 (112 is recommended)*	2
• Intermediate-level Physics: *Physics 113 and 114*	2
• Calculus: *Mathematics 120, 121, 130, and 131*	4
• Laboratory-based courses: *Physics 115 or 119*	1
• Upper-level courses: *Physics 123, 161, 162, and 174*	4
• Senior project: *Physics 231, or equivalent*	1
TOTAL IN CORE CURRICULUM	**14**
• *Additional approved electives*	4
TOTAL IN MAJOR PROGRAM	**18**

Students with strong backgrounds in physics and mathematics may replace required courses with appropriate advanced courses with the approval of the undergraduate physics advisor. Advanced placement credits may count toward major requirements. Advanced undergraduates may take graduate-level courses.

It is possible to complete all requirements for the major within three years, so it is not essential to begin the study of physics in the first year. Majors are required to confer with the undergraduate advisor every semester prior to registration to plan courses for the following semester and to ensure that all requirements for the major are being satisfied.

Information about career opportunities after graduation as well as further information about courses and major requirements can be obtained from the undergraduate physics advisor and other physics faculty members.

THE CAPSTONE EXPERIENCE

An independent research project is the most appropriate capstone experience for physics majors. Students are encouraged to "do physics" at the earliest possible opportunity. Majors are required to take a capstone course of one semester of Physics 231, *Special Projects in Physics I,* or an approved course of comparable scope. Near the end of the junior year (or earlier), a physics major should arrange a topic for his or her senior project in consultation with department faculty members. Work is conducted under the guidance of a faculty member, often with the assistance of graduate students. The faculty seeks to design projects that lead to publication in refereed physics journals. Majors with special interests in research may continue their research by enrolling in additional semesters of Physics 232 and Physics 233.

HONORS

Students apply for departmental honors in recognition of meritorious academic standards and creativity in research. An honors candidate must maintain an overall B- average. All eligible majors are encouraged to participate in the honors program. Written applications for the honors program should be submitted to the undergraduate advisor by the end of the junior year. Honors candidates are expected to conduct a research project under the guidance of a faculty member during the junior and/or senior years. A thesis describing the work must be submitted to the faculty no later than April 1 of the senior year and be defended orally in a special departmental convocation about two weeks later. Recommendation for honors in physics is made on the basis of the quality of the thesis and student performance in the defense. Students may gain credit for thesis research by registering for Physics 231, 232, and 233.

GRADUATE PROGRAM

The department offers the master of arts and doctor of philosophy degrees in physics. Departmental research is concentrated in experimental and theoretical studies of condensed matter including magnetic and optical properties of solids, magnetic critical phenomena, high temperature superconductivity, and the dynamics of first-order phase transitions. Other research areas include theoretical plasma physics, interdisciplinary studies of risk assessment and energy technology, and nuclear physics.

The academic requirements of the graduate program are flexible, with emphasis on early student participation in research and informal student evaluation. A distinctive part of each student's coursework is Physics 303, a research apprenticeship that introduces students to different research groups beginning in the first year of graduate study.

Beginning graduate students take a placement examination that tests their knowledge of undergraduate physics. Students failing this examination may be required to take remedial courses before entering fully into the graduate program and may be asked to fulfill the requirements of the M.A. before proceeding to the Ph.D.

To receive the M.A., degree students must satisfy the general University residence and course requirements, pass with a grade of B- or better four of the basic graduate courses (Physics 301, 302, 305, 306, 309, or 310) and one semester of Physics 303, and pass two oral examinations in the subject matter of the basic graduate courses. In contrast to the M.A. physics programs at many other universities, M.A. candidates must also complete a thesis based on original research.

To receive the Ph.D., degree students must fulfill University residence and course requirements, pass with a grade of B or better the basic graduate courses (Physics 301, 302, 305, 306, 309, and 310) and three semesters of Physics 303. The department does not rely on a formal written qualifying examination to evaluate student readiness for Ph.D. research. Instead, students must pass four oral examinations that stress qualitative as well as quantitative aspects of the subject matter of the basic graduate courses. Students also must pass at least one graduate course in a subject other than physics and complete a dissertation based on original research. Students entering with advanced standing and transferable credit are encouraged to demonstrate proficiency in the basic graduate courses through oral examinations.

Graduate students in both the M.A. and Ph.D. programs are required to obtain supervised teaching experience either as teaching assistants or teaching fellows in the department, or elsewhere, if approved by the department.

Further information on the research interests of the faculty and research opportunities for graduate students can be found in the departmental brochure, *Graduate Study and Research in Physics at Clark*. Copies are available upon request from the graduate student advisor.

Application forms for admission and financial aid may be requested from the chair of the department. During the academic year, financial support is available in the form of tuition remissions, teaching assistantships, and research assistantships. The department considers the financial support of its graduate students an important responsibility.

ASTRONOMY COURSES

Refer to full course descriptions under Astronomy.

101 EXPLORING THE UNIVERSE

Mr. Davies/Offered every fall

102 THE PLANETS AND SPACE EXPLORATION

Mr. Davies/Offered every spring

PHYSICS COURSES

102 DISCOVERING PHYSICS/Lecture, Laboratory

The course emphasizes hands-on laboratory experience and the learning of science in a way that is consistent with how science should be taught to children and how scientists gain new knowledge. Although the course is designed to be useful to students interested in education, it is open to all undergraduates, and no special expertise in mathematics and science is assumed. The main topics of interest are electricity and magnetism and wave phenomena with an emphasis on the properties of light. The course is cross-listed with Education 254, but all undergraduate students, regardless of major, are encouraged to enroll in Physics 102. Several laboratories and group discussions per week. The course satisfies the *scientific perspective* requirement in the Program of Liberal Studies.

Mr. Blatt, Mr. Gould/Offered every year

106 LIGHT, COLOR, AND VISION/Lecture, Discussion, Laboratory

This course covers a variety of optical and visual phenomena including the nature of light, the interaction of light with matter, human perception of color, and applications of light such as lasers and holography. Many color slides of natural, man-made and artistic phenomena are shown and students perform several experiments. The course satisfies the *scientific perspective* requirement and is designed primarily for students outside the physical sciences.

Mr. Kohin/Offered periodically

110 INTRODUCTORY PHYSICS–PART I

This is an introductory-level, problem-oriented course intended for science majors and the general student desiring a survey of physics. The course stresses the simplicity and self-consistency of physical models in explaining a variety of physical phenomena. Topics discussed include Newtonian mechanics and wave motion, and an introduction to the thermal properties of matter. Calculus is not required although elements of calculus are introduced during the course. Physics 110.1 is recommended for preprofessional students who are not majoring in physics. Physics 110.2 uses calculus and is recommended for prospective physics majors. The course may be followed by either Physics 111 or 112, depending on the particular goals of the student. Physics 110 together with Physics 111 fulfill the usual entrance requirements for medical and dental schools. There are three lectures and one discussion section per week.

Mr. Gould, Mr. Kohin, Mr. Landee/Offered every fall

111 INTRODUCTORY PHYSICS–PART II/Lecture, Discussion, Laboratory

A continuation of Physics 110. Topics include electricity, magnetism, optics, relativity, atomic physics, and nuclear physics. Students who do not intend to take a second year of physics should enroll in this course instead of Physics 112. Three lectures and one laboratory section are scheduled each week.

Mr. Agosta, Mr. Kohin, Mr. Landee/Offered every spring

112 CLASSICAL PHYSICS/Lecture, Discussion, Laboratory

This course is a continuation of Physics 110 for students desiring a more in-depth introduction to physics. The topics of electricity, magnetism, and light and optics are

explored in greater depth than in Physics 111. Physics 112 is the recommended second semester course for physics, mathematics, and other science majors who intend to continue with *Quantum Physics,* Physics 113. Three lectures and one laboratory per week. Credit is not given for both Physics 111 and 112. This course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. Permission of the instructor is required for entry. Corequisite: Mathematics 121 or 125.
Mr. Landee/Offered every spring

113 QUANTUM PHYSICS–SEMINAR I/Seminar, Laboratory
This course is the third semester of a four-semester introductory survey of physics and normally follows Physics 111 or 112. The seminar meets for three hours per week plus one afternoon of laboratory work. The course begins with a review of classical electromagnetism and radiation and then treats the experimental basis for Einstein's special theory of relativity and the quantum nature of light. Key experiments involve the measurement of the speed of light, the increase of electron mass with speed, photon counting techniques, and photon interference. The course involves both lectures and student presentations and seeks to train students in the art of oral and written expression of scientific ideas. This course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. Prerequisite: Physics 111 or 112; Corequisite: Mathematics 130.
Mr. Geschwind, Mr. Kohin/Offered every fall

114 QUANTUM PHYSICS–SEMINAR II/Seminar, Laboratory
This seminar is the fourth semester of an introductory survey of physics and is intended to follow Physics 113. The seminar nature of Physics 114 continues the pattern of extensive oral and written presentations established in Physics 113. The seminar meets for three hours per week and an afternoon of laboratory work. Students are encouraged to design their own experimental approaches. Physics 114 emphasizes the experimental basis of nuclear and atomic structure leading to the theoretical development of wave mechanics. Laboratory work employs modern research instrumentation to address the important contributions by Einstein, Rutherford, Compton, Moseley, Chadwick, and others. A special section deals with the technological application of nuclear fission and fusion. This course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. Prerequisite: Physics 113; Corequisite: Mathematics 131.
Mr. Geschwind, Mr. Kohin/Offered every spring

115 COMPUTER SIMULATION LABORATORY/Discussion, Laboratory
This course introduces students to the essential methods of computer simulation and its diverse applications. The course is project oriented, with students proceeding at their own pace depending on background and interests. Projects include the simulation of planetary motion, chaotic systems, fractal phenomena, simple random systems, and thermal systems. Methods include the numerical solution of differential equations and Monte Carlo techniques. The course also emphasizes the understanding of algorithms and structured programming and is recommended for prospective physics majors as an introduction to computer programming rather than Computer Science 101. Two laboratory sections and two discussion periods per week. This course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. No background in computer programming is necessary. Prerequisites: Physics 110, Mathematics 120, or permission of the instructor.
Mr. Gould/Offered every spring

118 OPTICAL PROJECTS LABORATORY/Discussion, Laboratory
This introductory laboratory covers the principles, applications, and techniques of optics. Basic imaging devices are treated, and optical instruments including the microscope and the camera are used. Diffraction, polarization, and interference are investigated. Special topics discussed include holography, fiber optics communication, the interaction of light with matter, and quantum optics. This course is of interest to majors in many disciplines including those in the physical sciences. It satisfies the physics laboratory requirement for premedical and predental students, and it satisfies the *scientific perspective* requirement of the Program of Liberal Studies. Two tutorial sessions and one laboratory per week. Prerequisite: one course in physics.
Mr. Kohin/Offered Fall 1992

119 ELECTRONICS LABORATORY/Discussion, Laboratory
This is a laboratory course designed to teach the principles of modern electrical measurement and control. Basic skills such as the fundamentals of DC and AC circuit theory and use of test instruments are discussed. Emphasis is on electronic circuit design, operational amplifiers, and digital circuits. The course satisfies the physics laboratory requirement for premedical/predental students. Two lectures and one laboratory each week. No prerequisites other than high school algebra.
Mr. Agosta/Offered every year

123 STATISTICAL AND THERMAL PHYSICS/Lecture, Discussion
This course introduces the concepts and techniques of statistical and thermal physics including statistical mechanics, thermodynamics, and kinetic theory. The goal of the course is to understand the behavior of macroscopic systems in terms of their basis in atomic theory. Topics treated include probability concepts, entropy and the second law of thermodynamics, the Boltzmann probability distribution, the thermodynamics of fluids and magnets, heat and work, and the first and second law efficiencies of simple engines. Prerequisite: Physics 113; Corequisite: Mathematics 131.
Mr. Gould/Offered every fall

161 THEORETICAL PHYSICS I/Lecture, Discussion
Physics 161 and 162 constitute an introduction to the concepts of classical physics. Topics considered in Physics 161 include particle and rigid body mechanics and the development of electro- and magnetostatics. The necessary mathematical methods are introduced and applied. Prerequisites: Mathematics 131 and Physics 111 or 112.
Mr. Davies, Mr. Kohin/Offered every year

162 THEORETICAL PHYSICS II/Lecture, Discussion
This course is a continuation of Physics 161. Topics covered include the development of electrodynamics through Maxwell's equations and relativity. Useful mathematical methods are developed. Prerequisite: Physics 161.
Mr. Kohin, Mr. Davies/Offered every year

174 ATOMIC AND NUCLEAR PHYSICS/Lecture, Discussion
This intermediate-level course provides an introduction to quantum mechanics. Basic principles are introduced, and the theory is applied to the study of atoms, nuclei, molecules, and solids. Prerequisites: Physics 114 and Mathematics 131.
Mr. Agosta, Mr. Landee /Offered every year

201 CLASSICAL DYNAMICS/Lecture, Discussion
This course is designed to prepare students for graduate work in physics. Topics covered include Hamilton's principle, classical scattering theory, rigid body motion, canonical transformations, Hamilton-Jacobi theory, and mathematical methods of physics. Prerequisite: Physics 161 and 162.
Staff/Offered every year

202 ELECTRODYNAMICS/Lecture, Discussion
This course is designed to prepare students for graduate work in physics. Topics covered include boundary value problems in electrostatics and magnetostatics, electromagnetic field equations and special relativity, electromagnetic waves, radiation theory, multipole fields, and mathematical methods of physics. Prerequisite: Physics 162.
Staff/Offered every year

205 QUANTUM MECHANICS-PART I/Lecture, Discussion
Physics 205 and 206 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. The goal of this year-long course is to prepare students for graduate work. The lectures are the same as in Physics 305, but assignments and evaluation are separate. Prerequisites: Physics 174 and Mathematics 131.
Mr. Davies/Offered every year

206 QUANTUM MECHANICS–PART II/Lecture, Discussion
Physics 206 is a continuation of Physics 205. Prerequisite: Physics 205.
Mr. Davies/Offered every year

209 STATISTICAL MECHANICS/Lecture, Discussion
This course is designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisites: Physics 123 and 174.
Mr. Gould, Mr. Phillies/Offered every year

215 ADVANCED COMPUTER SIMULATION LABORATORY/Discussion, Laboratory
This course is similar in nature to Physics 115 but treats topics at a more advanced level. The course is suitable for graduate students in the sciences or undergraduates who have completed Physics 115. Prerequisite: Physics 115 or permission of the instructor.
Mr. Gould/Offered every spring

219 ADVANCED ELECTRONICS LABORATORY/Discussion, Laboratory
This course is similar to Physics 119 but treats topics at a more advanced level. The course is suitable for graduate students in the sciences or undergraduates who have completed Physics 119. Prerequisite: Physics 119 or permission of the instructor.
Mr. Agosta/Offered periodically

230 DIRECTED READINGS IN PHYSICS
This course provides for special interests not covered in regular courses. Offered by arrangement and for variable credit.
Staff/Offered every semester

231 SPECIAL PROJECTS IN PHYSICS I

This is an independent research project in experimental, theoretical, or applied physics, done under the guidance of a faculty advisor. It is normally taken in the senior year to fulfill the senior project requirement. Students may enroll more than once in Physics 231 if they begin a new project under a different faculty advisor. Students in continuing projects should enroll in Physics 232 and 233. Offered for variable credit. By permission of the faculty advisor.
Staff/Offered every semester

232 SPECIAL PROJECTS IN PHYSICS II

This course is the second-semester continuation of Physics 231 for students engaged in an ongoing research project under the same faculty advisor. Offered for variable credit. Prerequisites: Physics 231 and permission of the advisor.
Staff/ Offered every semester

233 SPECIAL PROJECTS IN PHYSICS III

This course is the third-semester continuation of Physics 231 and 232 for students engaged in an ongoing research project. Offered for variable credit. Prerequisites: Physics 232 and permission of the advisor.
Staff/ Offered every semester

250 SENIOR SEMINAR

This capstone covers a selection of topics of current interest in physics. Offered for variable credit.
Staff/Offered periodically

301 CLASSICAL DYNAMICS

A graduate-level course in classical mechanics. The topics covered are similar to Physics 201 but treated in greater depth.
Staff

302 CLASSICAL ELECTRODYNAMICS

A graduate-level course in classical electromagnetic theory. The topics covered are similar to Physics 202 but treated in greater depth.
Staff

303 RESEARCH APPRENTICESHIP

A research apprentice actively participates in an experimental or theoretical research group of the department. Ph.D. students should enroll in the course for three semesters with a minimum of one semester in a theoretical group and one semester in an experimental group. M.A. students take a minimum of one semester.
Staff

305 QUANTUM MECHANICS–PART I/Lecture, Discussion

Physics 305 and 306 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. Topics treated include the foundations of quantum mechanics, symmetries and angular momentum, particle in a central potential, electron spin, and perturbation theory.
Mr. Davies

306 QUANTUM MECHANICS–PART II/Lecture, Discussion

Physics 306 is a continuation of Physics 305. Topics discussed include scattering theory, interaction of radiation with matter, second quantization, applications to simple atoms and molecules, and an introduction to many-body theory.
Mr. Davies

309 STATISTICAL MECHANICS/Lecture, Discussion

This is a comprehensive course in statistical mechanics with applications to physical and chemical systems. Topics discussed include ensemble theory, the statistical basis of thermodynamics, quantum statistics, the cluster expansion of a classical gas, ideal Bose and Fermi systems, applications of the renormalization group to the Ising model and linear polymers, and fluctuation theory.
Mr. Gould, Mr. Phillies

310 SOLID STATE PHYSICS/Lecture, Discussion

This course surveys the important experimental properties of solids and introduces students to the quantum theory of solids. Topics include crystal and reciprocal lattice structures, the free electron theory of metals, electronic band structure and the Fermi surface, lattice vibrations, and the elementary excitations of solids. Prerequisite: Physics 305, or permission of instructor.
Mr. Klein, Mr. Landee

317 SOLID STATE SPECTROSCOPY/Seminar

A theoretical and experimental review of the physics of solids observed using spectroscopic methods.
Staff

319 ADVANCED STATISTICAL MECHANICS/Lecture, Discussion

This course treats the statistical mechanics of interacting systems including the theory of critical phenomena and kinetic theory. Other advanced topics of current research interest also are discussed. Prerequisite: Physics 309.
Mr. Gould

320 ADVANCED SEMINAR IN PHYSICS

This course provides for special coverage of topics in physics of current research interest. Offered for variable credit.
Staff

325 RESEARCH SEMINAR

A student participation seminar in current research problems. Offered for variable credit.
Staff

340 COLLOQUIUM

Weekly invited lecturers speak on research topics of current interest. Required for all graduate students. Not offered for credit.
Staff

350 RESEARCH

Thesis and dissertation preparation. Offered for variable credit.
Staff

Psychology

DEPARTMENT FACULTY

James D. Laird, Ph.D., *chair*: emotional experience, self-perception, attributions to others, structures of person awareness, world hypotheses as personality variables

Sandra T. Azar, Ph.D.: high risk families, parenting, child abuse, developmental skills underlying self-control, adolescent depression

Robert W. Baker, Ph.D.: personality theory; abnormal behavior; clinical methods; measurement, prediction, and facilitation of student adjustment to college

Michael Bamberg, Ph.D.: first and second language acquisition, narratives, discourse analysis, cross-linguistic/cross-cultural comparison

Roger Bibace, Ph.D.: holistic developmental approaches to life cycle, behavioral sciences in family medicine, obstetrics and gynecology, doctor/patient relationships, psychoanalysis

Nancy Budwig, Ph.D.: language development, the development of categories of human action, socialization

Leonard Cirillo, Ph.D.: holistic developmental approach to metaphor, psychotherapies

Joseph H. deRivera, Ph.D.: the structure and function of different emotions, the relationships between emotion and action, the social psychology of peace and justice

Rachel Joffe Falmagne, Ph.D.: deductive inference and language, logical development

Wendy S. Grolnick, Ph.D.: motivation and development; self-regulation of emotion and behavior in infancy and early childhood; parent and teacher influence on children, motivation, and adjustment; child clinical psychology

Bernard Kaplan, Ph.D.: developmental orientation to, and analysis of, all psychological activities and operations in groups and in individuals

Thomas A. Schoenfeld, Ph.D.: developmental psychobiology, olfaction, neuroanatomy and behavior

David A. Stevens, Ph.D.: taste and smell, psychophysics, discrimination learning

Nicholas S. Thompson, Ph.D.: social behavior and communication of crows, bluejays, and mimic thrushes; evolutionary theory and behavior

Ina C. Uzgiris, Ph.D.: child development, parent-infant interaction, communication, self-other relations in cultural perspective

James V. Wertsch, Ph.D.: sociocultural approaches to mind, language, and thought; socialization of cognition and values; cultural identity in the context of globalization

Marianne Wiser, Ph.D.: visual perception; cognitive development, especially concept acquisition

ADJUNCT FACULTY

Sharon Griffin, Ph.D.

Linda Kennedy, Ph.D.

David Zern, Ph.D.

AFFILIATE FACULTY

Errol Baker, Ph.D.
John Bateman, Ph.D.
Robert A. Ciottone, Ph.D.
Ronald Cohen, Ph.D.
Craig Ferris, Ph.D.
Ross Greene, Ph.D.
Thomas Grisso, Ph.D.
Edith F. Kaplan, Ph.D.
Deborah S. Kellett, Ph.D.
Arnold Miller, Ph.D.
Robert J. O'Connell, Ph.D.
Marlene Oscar-Berman, Ph.D.
Lawrence Peterson, Ph.D.
Allen Rosenbaum, Ph.D.
Georgia Sassen, Ph.D.
Miriam Sexton, Ph.D.
Yvonne Wells, Ph.D.

RESEARCH ASSOCIATES

Cathleen Crider, Ph.D.
Jonathan Demick, Ph.D.
Mark Quirk, Ed.D.
Mary Walsh, Ph.D.

EMERITI

Tamara Dembo, Ph.D.
Seymour Wapner, Ph.D., *chair*, Executive Committee, Heinz Werner Institute
Morton Wiener, Ph.D.

FRANCES L. HIATT SCHOOL OF PSYCHOLOGY

In 1987 the Frances L. Hiatt School of Psychology was formed. This school has a major endowment provided through the generous support of the Hiatt family. The creation of the school, which encompasses the Department of Psychology, with the Heinz Werner Institute for Developmental Analysis and the Department of Education, provides additional opportunities for students entering the graduate program in either department. In addition to Frances L. Hiatt Fellowships, opportunities for organizing and attending conferences are available, as well as support for travel and for research activities for the school's faculty and students.

THE HEINZ WERNER INSTITUTE FOR DEVELOPMENTAL ANALYSIS

Associated with the department is the Heinz Werner Institute for Developmental Analysis, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent, such as anthropology, biology, and areas of medicine; and third, to train research workers on postdoctoral levels in the comparative-developmental approach to behavior. For more information, write to Dr. Seymour Wapner, chair of the institute's Executive Committee.

UNDERGRADUATE PROGRAM

In its undergraduate courses and research, the department emphasizes the same respect for scholarship that it has at the graduate level. The aims of the undergraduate program are: to promote respect for intellectual activity, to encourage an attitude of intelligent inquiry, and to highlight the implications of psychological knowledge for an understanding of everyday phenomena. The department offers educational experiences that will enhance students' liberal arts background and prepare them for graduate work in psychology or related disciplines.

Course Numbers:

Ranges of course numbers have specific meanings according to the following key:

Range	*Meaning*
100-109	Courses all majors must take
110-149	Survey courses, psychology as a life science
150-189	Survey courses, psychology as a social or human science
190-199	Special freshman and sophomore courses
200-214	Laboratory courses
215-229	Research courses
240-259	Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260-295	Primarily senior and graduate specialized seminars (may be taken for graduate credit without special permission)
298-299.9	Special courses (honors, directed readings, research, practicum)

Unless otherwise stated, Psychology 101 is a prerequisite to all other psychology courses. Beginning in Spring 1993, Psychology 107 is a prerequisite for *all* other psychology lab and research courses unless otherwise stated. Before that time, psychology majors may substitute another lab or research course for Psychology 107.

MAJOR REQUIREMENTS

The major in psychology includes requirements in psychology and related courses. The psychology requirements are designed to ensure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or as a social science. They also ensure some familiarity with experimental and observational methods (Psychology 107 and the laboratory requirement), provide background in essential quantitative skills (statistics requirement: Psychology 105), and guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two groups of related courses reflects the conviction of the department that all academic areas are actually or potentially related to psychology, and also that scholarship involves, at some point, studying subject matter in considerable depth.

1. **Psychology Courses**
   Total of at least eight full-course equivalents, including:
   a. 101 *General Psychology* or 155 *Psychology as a Human Science*

   - b. 105 *Quantitative Methods*
   - c. 107 *Approaches to Psychological Research*
   - d. One full-course equivalent from range 110-149 (survey courses, psychology as a life science)
   - e. One full-course equivalent from range 150-189 (survey courses, psychology as a social or human science)
   - f. One full-course equivalent from range 200-229 (laboratory and research courses)
   - g. Two full-course equivalents from range 240-295 (upper-level seminars)

2. **Groups of Related Courses**

A group of related courses is defined as at least four full-course equivalents in a single area or department. Two groups of related courses must be chosen from the following areas or departments:

Biology
Chemistry
Classics
Communication Studies
Comparative Literature
Computer Science
Economics
Education
English
Environment, Technology, and Society
Foreign Languages and Literatures
Geography
Government and International Relations
History
International Development
Management
Mathematics
Neuroscience
Philosophy
Physics
Sociology
Visual and Performing Arts
Women's Studies

There are two restrictions on permissible course sequences within an area or department:

a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes the introductory courses designed for nonmajors.
b. The courses must form a coherent sequence or program within the context of the department in which a group of related courses is taken. In most cases, this will be self-evident. However, in doubtful cases, the student must consult his or her psychology advisor.

The Honors Program

Honors work in psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the honors program by requesting the faculty member under whose direction they intend to do research work to submit their names to the full faculty for consideration by the end of the junior year. Students in the honors program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides a basis for a thesis which, upon completion, is presented and defended by the student before an examining committee of faculty members. On the basis of the report of the examining committee and the student's advisor for the project, the department may recommend that the student be awarded departmental honors at one of the following levels: highest honors, high honors, or honors in psychology.

DOCTORAL PROGRAM

General Requirements

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide students with a general integrated background covering the various areas of psychology. Within these emphases, there are several specialized programs available.

Although a small department cannot reflect the entire spectrum of perspectives toward the study of psychology that one finds in the United States, a considerable number of theoretical orientations are exemplified by the various members of the department. The most important feature of the department's intellectual ethos is an emphasis on theoretically grounded inquiry and conceptually and methodologically rigorous research. In all of the department's programs, including the clinical program, there is a deep concern with conceptual analysis and theoretically grounded and directed inquiry. The department is perhaps unusual on the American scene in the diversity of methods of investigation used by faculty and graduate students in their work and the range of problems considered to fall within the purview of psychologists. Students are acquainted not only with traditional experimental and naturalistic methods, but also with phenomenological, structural, hermeneutic, and other methodologies.

Participation in research is strongly encouraged throughout the graduate experience, the nature of the research being determined by interests a student shares with faculty members. Students are expected to contribute significantly to problem formulation, conceptualization, methodology, analysis, and write-up of research work.

Advisory Committee

A committee consisting of two full-time faculty members is assigned to help each student plan a curriculum to best meet individual needs and goals. This committee consists of one faculty member whose work is closest to the student's research interests, and one other assigned by the department. The committee may change or waive any of the requirements of specific training programs, but ordinarily its function is to assist students in selecting a curriculum from within the normal requirements.

Information on other kinds of committees and advisors encountered during graduate work is available in the graduate program brochure.

Coursework

Students ordinarily are expected to take four courses in each semester for their first two years, including *Problem, Theory, and Method in Psychology* (301) and *Statistical Methods* (302) in their first year. In subsequent years, students continue to enroll in a full program that ordinarily includes two or three content courses and research and reading courses. A total of at least eighteen one-semester courses is required for admission to candidacy for the Ph.D. There are special course distribution requirements in effect for clinical students, and clinical applicants should consult the section on *Training in Clinical Psychology* for information about course requirements. Content courses include: all graduate seminars; clinical methods courses; *Statistical Methods; Problem, Theory, Method;* and courses numbered 240-295; but do not include research and readings courses unless approved by special petition to the department, nor practicum courses (e.g., 380-389).

Research in the First Year

To encourage each student to participate actively in research from the beginning of graduate training, a research apprenticeship program exists through which faculty and students can voluntarily begin working on research together during the first year. Participating faculty provide a brief description of current research projects in which students can become involved or notify students about when their project meetings are held. During the first two weeks of each semester, students have the opportunity to consider these projects and contact a faculty member to discuss becoming an apprentice in the described research project.

Qualifying Papers

To provide a basis for evaluation of a student's scholarly qualifications for admission to Ph.D. candidacy, all students are required to write four scholarly papers, one during each of the four semesters in the first two years in residence. Each paper should be prepared for reading by a different *full-time* faculty member in the Psychology Department. The topic for each paper is to be agreed upon by the student and the reader and approved by the student's advisory committee. Written examinations and ordinary term papers for courses will not be accepted to satisfy this requirement. All papers must be of reasonable length commensurate with the topic. A copy of each paper is placed in the student's file. Students are encouraged to submit at least one of the four papers for publication in a scholarly journal. All papers must be submitted and evaluated prior to scheduling the oral examination on the M.A. thesis.

Qualifying Examination in Statistical Methods

All students are required to demonstrate competence in statistical methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in statistical methods.

M.A. Degree

The M.A. degree, a required step in our Ph.D. program, is awarded after satisfactory completion of at least eight one-semester courses or their equivalent; the fulfillment of the departmental qualifying paper requirement; and the execution of an empirical thesis under the supervision of a faculty member and adequately defended in a one-hour examination. The thesis is expected to be relatively brief and may be written in the form of an article suitable for submission to a journal appropriate to the kind of work embodied in the research. All of these requirements for the M.A. degree must be completed by the end of the second year of graduate study. Students who have not completed their M.A. degree by August 1 at the end of the second year are not permitted to enroll as resident students for the third year. Students who do not complete the M.A.

degree by the end of the third year ordinarily are not permitted to continue in the Ph.D. program, but they are given ample opportunity to complete a master's degree.

Major Paper and Oral Examination

The major paper is normally to be done within one year after completing the M.A. This paper is expected to demonstrate mastery of research and theory in the student's area of specialization. To facilitate completion, students are encouraged to enroll in *Directed Readings* with a faculty member during one or both of the semesters in which the paper is to be completed. An oral examination on this material will be held shortly after the paper has been submitted. If the paper is not finished on time, the faculty will select some of its members to give additional help to these students during the summer. Students who do not complete the paper before August 1 of the third year will not be permitted to enroll as resident students for the fourth year or until the paper is completed.

Admission to Ph.D. Candidacy

Satisfactory completion of at least eighteen one-semester content courses (including 301 and 302), as well as the above requirements, is necessary for admission to candidacy for the Ph.D. degree. All the requirements for Ph.D. candidacy, including the major paper, must be met within two years of completing the M.A. Students who do not do so may be dropped from the Ph.D. program.

Ph.D. Dissertation

Students demonstrate the ability to conduct research by the presentation of an acceptable dissertation. The topic of the dissertation usually is selected by the student working with one or more members of the faculty. Once the student has worked out a general research plan, a dissertation committee is formed to supervise and assist in all phases of the research effort, from articulation of the research design to the write-up of the final draft. After the committee has reviewed the dissertation proposal carefully, the proposal is circulated to all other members of the faculty for comments and suggestions. The dissertation committee then has the authority and responsibility to approve the final form of the proposal before the student undertakes the actual research. After completion of the research, the student submits a draft of the dissertation to the committee, which will aid the student in making necessary revisions. At the point that the committee decides that the dissertation is complete and ready for presentation, copies of the dissertation are made available to the entire department faculty.

Ph.D. Oral Examination

Following submission of the dissertation to the department, a final two-hour oral examination is held in which the student presents and defends the dissertation and shows competence in a general field of psychology as well as in the area of specialization.

These guidelines result in an upper limit of six years for completion of the Ph.D. (excluding an internship year or official leave). An additional year may also be granted by faculty approval of a petition on other grounds, such as part-time study because of financial necessity. Those desiring more detail on graduate requirements and their timing should request a copy of *Information on the Graduate Program in Psychology.*

Graduate Training in Clinical Psychology

The basic philosophy in training clinical psychology students, as for all graduate students in the department, is that specialization is a process of individuation and emphasis rather than one of restriction, isolation, or compartmentalization. Our aim is to provide an integrated series of intensive educational experiences in which specialist training in clinical psychology is attained against a background of increasing competence in general psychology, theory, and research.

In addition to more traditional training, the program offers opportunities in: (1) child clinical, (2) clinical neuropsychology, and (3) marital and family intervention. The program has, in addition to the general requirements, the following special requirements. Students must take at least one course from each of three areas: (1) biological bases of behavior (e.g., physiological psychology, behavior and evolution, human neuropsychology); (2) cognitive-affective bases of behavior (e.g., symbolism, cognitive development, logical reasoning, action and emotion); and (3) social bases of behavior (e.g., interpersonal relations, social cognition). Students must take the following courses in individual behavior: *Psychopathology* (311) and *Theories of Psychotherapy* (310). Students must complete a minimum of one year of internship in clinical settings; they may satisfy this requirement by a full-time internship in the third or fourth year or by an internship "distributed" part-time over several years. All clinical students participate for four years in practicum training offered at the University and other agencies. For further information, contact the director of clinical training.

Graduate Study in Developmental Psychology

The developmental psychology curriculum is intended to prepare students for a career in research, teaching, and scholarly activity. It strives to impart both theoretical sophistication and competence in observational, experimental, and comparative inquiry with regard to developmental issues. The emphasis is on ways of representing and examining all life phenomena rather than focusing exclusively on a particular population (e.g., infants, children, adults) or a specific subject matter. Within this general framework, however, in-depth training is offered with particular populations and in specific areas (communication, language, symbolization, social relations, parent-infant interactions, cognition, logical reasoning, psychopathology, collective phenomena, and others). In addition to requirements common to all graduate students, those with a concentration in developmental psychology are required to take the *Developmental Psychology Colloquy.*

Since there are no sharp separations among different areas within the department, students who work primarily in developmental psychology have the opportunity to study with other faculty in the department who have an interest in an approach to their areas of specialization. For further information, contact Dr. Ina C. Uzgiris.

Graduate Study in Social-Personality Psychology

Perhaps the most distinctive feature of the social-personality curriculum is its emphasis on the description and analysis of social *experience* and *action.* The faculty members most directly involved have developed different research strategies that tap into the experiences of everyday life and the development of moral action. They focus on the social-emotional aspects of interpersonal relations, the role of affective experience in the choices that persons confront as they lead their lives, and the manner in which persons come to know and experience themselves. While there are no formal requirements in the social-personality area, students are expected to become acquainted with the main approaches to experience and action, and are encouraged to participate in seminars with as many different faculty members as possible. For further information, contact Dr. Joseph deRivera.

Graduate Study in Cognitive and Experimental Psychology

Graduate training towards the Ph.D. is offered in the areas of cognition, language, environmental cognition, perception, and sensory psychology. There is a flexible sequence of seminars to cover the theoretical foundations, content, and methodology in those areas, as well as specialized seminars.

Some of the current experimental interests of the faculty include logical cognition, mental imagery, conceptual development, visual perception, sensory psychology, psychophysics of taste and smell, and individual differences in cognitive processing.

In teaching and research the faculty reflects the values traditional at Clark, which emphasize theoretical relevance and preserving and exploring the connections among areas of specialization. Faculty and students within and across areas typically maintain extensive and regular interactions. In particular, most of the faculty have close connections with the developmental and social-personality areas, both in teaching and research.

The department also has educational and research ties with a number of institutions in the Worcester-Boston area (e.g., the Neuropsychology Unit of Boston Veterans Administration Hospital, the Worcester Foundation for Experimental Biology, the University of Massachusetts Medical School), as well as other departments at Clark.

For further information, contact Dr. Marianne Wiser.

Graduate Study in Psychobiology

Students admitted to the Graduate Program in Psychology may elect to concentrate their studies and research in psychobiology. This area of specialization is allied closely with cognitive and experimental psychology in examining the processes of sensation and perception, learning, and social communication, among others, but it places a particular emphasis on the biological aspects of these phenomena, utilizing especially the perspectives and techniques of neurobiology, physiology, and ethology. Formal coursework draws on offerings in psychobiology, cognitive and experimental psychology, neuroanatomy, and neuropsychology by our department and offerings in neurophysiology, neurochemistry, and molecular neurobiology in the Departments of Biology and Chemistry. Together, these courses also form the curriculum for the University's Neuroscience Program.

Opportunities for research in psychobiology exist within the Department of Psychology, the Departments of Biology and Chemistry, and at affiliated academic institutions in the Worcester Consortium, particularly at the Worcester Foundation for Experimental Biology and the University of Massachusetts Medical School. Current research interests of affiliated faculty concern some aspect of either the chemical senses (taste and smell), social communication, or development. For further information, contact Dr. Thomas A. Schoenfeld.

POSTDOCTORAL TRAINING

The Psychology Department and the Heinz Werner Institute provide postdoctoral training. In addition to individually oriented research and training opportunities, seminars are available for postdoctoral students.

COURSES

101 GENERAL PSYCHOLOGY/Lecture, Discussion

Introduction to the principles of human behavior. No prerequisite. Unless otherwise noted, this course is a prerequisite to all other psychology offerings.
Mr. Laird/Offered every semester

105 QUANTITATIVE METHODS/Lecture

Introduction to the theory and methods of statistical inference, logic of experimental design, and the use of computer statistical packages. Psychology 101 is a prerequisite.
Mr. Laird/Offered every semester

107 APPROACHES TO PSYCHOLOGICAL RESEARCH/Lecture, Discussion

This course focuses on the role of research in psychological thought and theoretical development, research methods, and the principles of experimental design. The methods discussed cover the range of those used by psychologists. They include those of qualitative analyses and hermeneutics as well as the traditional experimental methods. This course is a prerequisite for all laboratory or research courses, unless otherwise noted.
Staff/Offered every semester

110 INTRODUCTION TO PSYCHOBIOLOGY/Lecture

The biological foundations of behavior and mental processing are presented, with particular emphasis on achieving both a working knowledge of the intricacies of brain function and an understanding of the scientific process by which brain-behavior relationships are studied and elucidated. Topics include: the architecture of the brain, how drugs affect the nervous system, the senses and the neural basis for perception, the role of hormones in sexuality and stress, the duality of consciousness, the biological bases of social communication, the neural mechanisms for storing and retrieving memories, and the psychological consequences of neural dysfunction. Students who would like a more rigorous treatment of both neurobiology and psychobiology should take *Neuroscience I and II* (Psych 140 and 141).
Mr. Schoenfeld/Offered every year

120 HUMAN COGNITION/Lecture

Introduction to the study of concepts, memory, language, reasoning, and other higher mental processes. The course provides an introduction to the general perspective, the current theoretical questions, and the empirical findings in the field of cognitive psychology concerning those processes/functions. Objectives are to introduce students to the content area and the theoretical issues, to stimulate students' critical thinking regarding the relation between theory and evidence, to stimulate students' interest in the study of cognition, and to develop in students a basic literacy in the area as well as the capacity to think further about questions of interest to them.
Ms. Joffe Falmagne/Offered every year

130 PSYCHOLOGY OF LEARNING/Lecture

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.
Mr. Stevens/Offered every year

135 THE PARADOX OF ANIMAL SOCIALITY/Lecture

Evaluates a new evolutionary perspective called sociobiology by examining Darwinian theory as it applies to animal social organizations. The course redefines such concepts as natural selection, adaptation, communication, personality, emotions, grouping, and territoriality as they apply to animal behavior. This course is run with much class discussion and emphasis on questioning theories, constructing new models, and arriving at new, clearer definitions. Prerequisite: Introductory biology or psychology normally required, but open to freshmen with special qualifications; please see instructor.
Mr. Thompson/Offered every year

140-141 NEUROSCIENCE I and NEUROSCIENCE II/Lecture

A two-semester, two-credit course, covering the basic neurosciences and brain/behavior functions. The course is taught by staff from the Psychology and Biology Departments and guest lecturers from the University of Massachusetts Medical School and the Worcester Foundation for Experimental Biology, among others. Prerequisites: Psychology 101 and Biology 100.
Staff/Offered every year

142 SENSATION AND PERCEPTION/Lecture

The five senses are studied with special emphasis on visual perception. Focus is on the processes by which information is picked up from the environment and then coded, transformed, and integrated by the sensory systems. Topics include: the neurophysiology of each sensory system, basic visual and auditory functions, pattern perception, distance and size perception, color, visual illusions, and perceptual development.
Ms. Wiser/Offered every year

150 DEVELOPMENT IN CHILD AND ADOLESCENT/Lecture

The development of intellectual and social functioning in the child and adolescent is discussed. Theoretical approaches to conceptualizing change in the developing child are emphasized and contrasted in light of current studies.
Mr. Bamberg, Ms. Budwig, Ms. Uzgiris/Offered every year

155 PSYCHOLOGY AS A HUMAN SCIENCE/Dialogical format

A close examination of attempts by scholars from a wide variety of disciplines (philosophy, history, literature and literary criticism, anthropology, political science, theology, linguistics, semiotics, depth psychology) to describe, understand, and explain complex human action, experience, thought, and production in everyday life. This course is intended to provide a radical alternative to much of current academic psychology, with respect to theories, problems, and methods. Given on a credit/no credit basis. Note: *For psychology majors,* this course is a prerequisite for upper level psychology courses: 240, 242, 256, 260, 276, 277, 280, and 284. Psychology 101 is *not* a prerequisite for this course nor any of the upper level courses listed here.
Mr. Kaplan/Offered every year

160 LANGUAGE, EMOTIONS, THOUGHT, AND CULTURE/Lecture, Discussion

Designed especially for freshmen and sophomores, this course investigates to what degree the human "mind" and the "soul" are sociocultural products and what role "language" plays in their formation. Specific questions addressed are to what degree languages differ from one another, whether the mind and emotions are separate faculties, and to what extent they can be viewed as parts of different cultural belief

systems. The general aim of the course is to create awareness of cultural differences and commonalities, and to relate this to one's background and heritage.
Mr. Bamberg, Ms. Budwig/Offered periodically

162 PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR/Lecture, Discussion
Offers students a basis for the understanding and application of psychoanalytic (Freudian) concepts. Students are challenged to interpret simple and complex conflicts in behavior. The course focuses on the way psychoanalysts reason. The final examination requires students to analyze a major literary work from a psychoanalytic perspective. Psychology 101 is *not* a prerequisite.
Mr. Bibace/Offered every semester

170 SOCIAL PSYCHOLOGY/Lecture, Field Experience
An examination of love, fear, conflict, and other basic processes involved in group dynamics, interpersonal relations, community psychology, intergroup relations, organizational behavior, and the interface between human nature and culture. These basic processes are related to the choices that govern the attempt to achieve a world of peace and justice. Students are asked to apply their knowledge of basic processes by undertaking two moral actions. The first of these is on a direct personal level and deals with the ability to assert oneself, to accept others, and to take risks. The second involves field experiences in dealing with the problems posed by our memberships in a world community: the reduction of hunger, poverty, prejudice, environmental degradation, nuclear and conventional arms proliferation, and the securing of human rights. Prerequisite: Psychology 101 or permission.
Mr. deRivera/Offered every year

172 PSYCHOLOGY OF PERSONALITY/Lecture
Considers theories regarding behavioral differences among persons in response to the same or similar situations; includes typological, trait, psychoanalytic, traditional and neobehavioristic, and personological conceptions.
Mr. Baker/Offered every semester

173 INTRODUCTION TO ABNORMAL PSYCHOLOGY/Lecture
This course begins with a discussion of the manner in which abnormal behavior has been defined traditionally and the implications of these definitions. Then a comprehensive overview of the major categories of abnormal behavioral disorders is provided with an emphasis on theory and research (e.g., schizophrenia, affective disorders, substance abuse, eating disorders, etc.). Special attention is paid to issues of assessment, intervention, and prevention. Psychology 172 is a prerequisite.
Ms. Grolnick/Offered every year

200 LABORATORY IN ETHOLOGY/Laboratory, Discussion
The members of the class participate in research projects on the behavioral biology of a variety of species, mostly birds. Members work in small teams each of which is devoted to the study of a single species. Enrollment is limited, and admission is by negotiation.
Mr. Thompson/Offered periodically

201 LABORATORY IN SOCIAL PSYCHOLOGY/Laboratory, Discussion
General principles of experimental design are learned through the design and performance of original experiments in experimental social psychology. Both group

and individual experiments are conducted in any of the usual topic areas of social psychology. Prerequisites: Psychology 105, 107, 170 and permission of the instructor.
Staff/Offered periodically

202 LABORATORY IN DEVELOPMENTAL PSYCHOLOGY/Laboratory, Discussion

A general introduction to conceptual issues related to research On human development. Students participate in group research projects involving both observational and experimental techniques and will receive training in all phases of research, including formulating research questions, data collection and analysis, and report writing. Prerequisites: Psychology 105, 107, and 150.
Ms. Budwig/Offered every other year

203 LABORATORY IN HUMAN COGNITION/Laboratory, Discussion

Experimental studies are conducted in the areas of reasoning, categorization, language comprehension, learning, and memory. This course familiarizes students with the methods used in cognitive psychology, the range of problems studied, and the theoretical concepts used to interpret experiments. The course is designed to teach research skills and scientific writing in the context of conducting closely supervised experimental projects and independent projects in cognition. Prerequisite: Psychology 105, 107, and 120. (Psychology 120 can be taken the same semester as the lab.)
Ms. Joffe Falmagne/Offered every other year

204 LABORATORY IN EMOTION AND MOTIVATION/Laboratory, Discussion

Includes the design of studies to test ideas about emotions and how they influence our actions, the gathering of data, and ways to report the data to the psychological community. Prerequisite: Psychology 105, 107, permission.
Mr. deRivera/Offered every other year

205 LABORATORY IN TASTE AND SMELL/Laboratory, Discussion

Concepts of experimental design and method are discussed. Experiments are conducted on the scaling of taste, smell, and flavor. Examples are the comparison of the sweetness and pleasantness of different sugars, and the determination of the role of odor in flavor perception. Prerequisite: Psychology 105 and 107.
Mr. Stevens/Offered every year

206 LABORATORY IN PERSONALITY/Laboratory, Discussion

The issues and problems in psychological research in general–and in the personality area in particular–are examined, with the problems being exemplified in studies developed and performed by the class and by individuals. Experiments may be in any of the conventional areas of personality research, such as perceptual defense, motives and performance, self-perception, experimenter influence, and emotions. Prerequisites: Psychology 105, 107, 172, and permission of the instructor.
Staff/Offered every year

207 LABORATORY IN ANIMAL COMMUNICATION/Laboratory, Discussion

Using state-of-the-art sound analysis equipment, the course explores how information is encoded in the sounds of animals and humans. Permission of the instructor is required.
Mr. Thompson/Offered periodically

208 LABORATORY IN CHILD PSYCHOLOGY/Laboratory, Discussion
An introduction to research methods employed in the study of children through participation in studies carried out by the class. Analysis and write up of results are done individually. Relevant theoretical and methodological issues are discussed with the aim of placing the experimental study of child behavior within the study of development. Prerequisites: Psychology 105, 107, and 150.
Ms. Uzgiris/Offered periodically

209 LABORATORY IN STUDENT ADJUSTMENT TO COLLEGE/Laboratory
The rationale, method, and findings of an ongoing research project at Clark investigating personological and environmental determinants of adjustment to college, with consideration of similar research elsewhere as reported in the professional literature. Relevant issues in psychological measurement are addressed, and each student does an empirical investigation pertinent to the course topic. Prerequisites: Psychology 101, 105, 107, 172 and permission of the instructor.
Mr. Baker/Offered every semester (except in 1992/93)

210 LABORATORY IN LANGUAGE AND COMMUNICATION/Laboratory, Discussion
A general introduction to conceptual issues related to research in the area of language and communication. Students participate in group research projects involving both observational and experimental techniques and will receive training in all phases of research, including formulating research questions, data collection and analysis, and report writing. Prerequisite: 105, 107, and permission of the instructor.
Mr. Bamberg/Offered every other year

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING/Laboratory, Discussion
The illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting is observed. Special consideration is given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis, and F. Kluckhohn. Students carry out field observations and formulate and execute their own individual projects. Prerequisites: Psychology 105 and permission of instructor.
Mr. Zern/Offered every year

212 LABORATORY IN GENERAL PSYCHOLOGY/Laboratory, Discussion
Students develop skills investigating various aspects of human behavior and experience. No prerequisites other than Psychology 101, 105, 107 and a willingness to bring good questions to the laboratory. Permission of the instructor is required.
Mr. Thompson/Offered periodically

213 LABORATORY IN GROUP DYNAMICS/Laboratory, Discussion
This course investigates the conditions that promote caring and reduce fear in interpersonal and group dynamics. Each student is responsible for leading weekly meetings of a group in 170 (*Social Psychology*). Prerequisite: Psychology 105, 107, 170, and permission of the instructor.
Mr. deRivera/Offered every year

214 LABORATORY IN PSYCHOBIOLOGY/Laboratory, Discussion
The principles of the scientific method are presented as a framework for learning how to design, conduct, analyze, and interpret experiments in psychobiology. Topics for

laboratory investigation may include ethology of rodent social behavior, neuroanatomy of the rodent brain, neuropsychology of feeding behavior, and psychopharmacology of learning and memory. Prerequisites: Psychology 105, 107, 110, or 141; and permission of the instructor.
Mr. Schoenfeld/Offered every other year

215 RESEARCH IN EMOTION AND MOTIVATION/Laboratory, Discussion
Working in close collaboration with the instructor, students design, conduct, and present a piece of research that investigates an emotional or motivational phenomenon. Prerequisites: Psychology 204 or permission of instructor.
Mr. deRivera/Offered every other year

216 RESEARCH IN STUDENT ADJUSTMENT TO COLLEGE/Laboratory, Discussion
Supervised individual participation in an ongoing research project at Clark investigating personological and environmental determinants of adjustment to college. Prerequisites: Psychology 209 and permission of instructor.
Mr. Baker/Offered every semester (except in 1992/93)

217 RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD/Laboratory, Discussion
With roots in Piaget's theories, a constructivist-interactionist approach to the study of development in infancy and early childhood is exemplified through the findings and problems from ongoing research projects. Students each formulate a pertinent study, carry it out, and prepare papers describing their work. Prerequisite: Psychology 208 or another laboratory course and permission.
Ms. Uzgiris/Offered periodically

218 RESEARCH PRACTICUM IN HEALTH AND EDUCATION/Practicum, Discussion
Students are assigned to institutional settings in the domains of health (hospitals, clinics, family health centers) and education (elementary schools, schools for disturbed children). Students adopt a clinical-helping orientation irrespective of the chosen methods in inquiry (e.g., interviewing, naturalistic observations). An integrated, comprehensive report combining the scholarly and practicum aspects of the project is required. Limited to 15 juniors and seniors. Prerequisite: Psychology 107, 258, and permission of the instructor.
Mr. Bibace/Offered every year

219 RESEARCH IN PSYCHOBIOLOGY/Laboratory, Discussion
Students participate in the design, conduct, and interpretation of experiments in an ongoing research program in psychobiology. Prerequisites: Psychology 214 and permission of the instructor.
Mr. Schoenfeld/Offered periodically

220 RESEARCH IN CHEMORECEPTION/Laboratory, Discussion
With the instructor, students design, conduct, and interpret research in taste, smell, and flavor. Prerequisite: Psychology 205 and permission of instructor.
Mr. Stevens/Offered every year

221 RESEARCH IN SOCIAL PSYCHOLOGY/Laboratory, Discussion
Students participate in the design, execution, analysis, and interpretation of research on self-awareness and self-knowledge, including areas of emotions, attitudes, and abilities. Prerequisites: 105, 107, 170 and permission.
Mr. Laird/Offered every year

222 RESEARCH IN CONCEPTUAL DEVELOPMENT/Laboratory, Discussion
Students participate in an ongoing research program in collaboration with the instructor in the area of conceptual development. Enrollment limited. Prerequisite: permission of the instructor.
Ms. Wiser/Offered periodically

223 RESEARCH IN MOTIVATIONAL AND EMOTIONAL DEVELOPMENT IN INFANTS, CHILDREN, AND ADOLESCENTS/Laboratory, Discussion
Students participate in an ongoing research project on the effects of parent-child interaction on emotional and motivational development along with a research team. Students learn about research design and the analysis and interpretation of results. Participants pick a topic of interest and prepare a written paper.
Prerequisites: 105, 107, and permission.
Ms. Grolnick/Offered every semester

224 RESEARCH ON NARRATIVE DEVELOPMENT/Laboratory, Discussion
This course is designed to give students a training experience in an ongoing research project on the development of narratives. Prerequisite: permission of the instructor.
Mr. Bamberg/Offered periodically

225 RESEARCH IN FAMILY AND CHILD/Laboratory, Discussion
Working in close collaboration with the instructor, students participate in ongoing research projects examining family issues either with children, adolescents, or parent-child dyads. The research takes place within a cognitive behavioral framework. Students, through group and individual discussions with the instructor, develop a question on which they would like to focus. They then design and conduct a study, and write up their results. Prerequisite: permission of the instructor.
Ms. Azar/Offered every year

227 RESEARCH IN SOCIOCULTURAL APPROACH TO MIND/Laboratory, Discussion
Students participate in an ongoing research program in collaboration with the instructor in the area of cultural and subcultural differences. Prerequisite: Psychology 289 and/or permission of the instructor.
Mr. Wertsch/Offered periodically

228 RESEARCH ON DEVELOPMENTAL ASPECTS OF TRANSACTIONS OF PERSONS-IN-ENVIRONMENTS/Laboratory, Discussion
Theory, findings, and research problems deriving from an ongoing research program—a holistic-developmental, systems-oriented approach to the analysis of transactions of persons-in-environment—are discussed. Empirical studies on problems relevant to the research program are formulated and conducted by individual students. A research proposal and final report describing the research project are prepared. Ideally, the research is presented at undergraduate or professional meetings, and a manuscript is

prepared for submission to a journal. Prerequisites: Psychology 105 and permission of instructor.
Mr. Wapner/Offered every semester

229 RESEARCH IN THE DEVELOPMENT OF LANGUAGE/Laboratory, Discussion

In collaboration with the instructor, students participate in an ongoing research program in language development. Students are responsible for various phases of research, including preparing literature surveys, data analyses, and interpretation of results. Towards the end of the semester, students prepare a written paper describing their work. Prerequisite: permission of instructor.
Ms. Budwig/Offered periodically

240 DEVELOPMENTAL APPROACHES TO BEHAVIOR/Seminar

A critical examination of the presuppositions, methods, and empirical inquiries of those concerned with the developmental analysis of diverse kinds of behavioral systems or aspects of systems. Implications of developmental conceptualization for all of the life sciences are discussed. The course also focuses on recent critiques of developmental theories in general (e.g., Foucault, Derrida, Kaplan) as well as critiques (e.g., Carol Gilligan) of specific developmental approaches. Accessible to juniors, seniors, and graduate students. Enrollment limited. Prerequisites for undergraduates: Psychology 155 and permission of instructor. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

242 PSYCHOLOGY OF LANGUAGE/Seminar

A social-psychological, anthropological, and rhetorical consideration of the various functions of language in human behavior. Deals with the ways in which the linguistic system is used as symbolic action in everyday life, poetry, dreams, and social movements. Also examined are various views concerning the relations between language and thought, language and action, language and knowledge, and language and politics. Open to juniors and above. Enrollment limited. Prerequisite for undergraduate psychology majors: Psychology 155. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

243 SEMINAR IN PHENOMENOLOGICAL PSYCHOLOGY/Seminar

Describes and analyzes personal experience. Each of the readings describes a different aspect of experience. These are then compared with our own experience of our body, our environment, ourself, others, our emotions, actions, and thoughts, as well as with our imagination and our relationship to reality.
Mr. deRivera/Offered periodically

245 DEVELOPMENT IN INFANCY/Seminar

Current research on human infants is examined, with emphasis on relations between functioning during this period and later in ontogenesis. A view of the child as an organized adaptive system is emphasized. Topics considered include learning, intellectual functioning, social relationships, and the beginnings of language. Some consideration is given to deviations from normal development. Prerequisite: permission of instructor.
Ms. Uzgiris/Offered every other year

249 WOMEN IN SOCIETY/Seminar

Includes three related parts: (1) *the context,* including a cross-cultural, anthropological examination of women's cultural status in society; a study of the economic, historical, and environmental factors impinging on the individual (language, media, literature, cultural institutions); and a discussion of the role of biological factors in psychological functioning; (2) *individual functioning,* covering such topics as personality development, life issues of women, achievement, motivation, intellectual functioning, and power; (3) *women's roles and functions in society,* including mothering, work, professional careers, homemaking, politics, and issues relating to role choices and adult development. The course objectives are: (a) to promote a broadly based understanding of the cultural, historical, economic, and environmental factors affecting women's development and functioning and (b) to equip students to pursue informed discussions and critical thinking on related issues. Discussions of interactions between cultural, social, psychological, and biological factors are emphasized. Extensive bibliographical references are provided.

Ms. Joffe Falmagne/Offered every year

251 LANGUAGE DEVELOPMENT/Seminar

A comprehensive survey of the basic issues and topics involved in the study of language development. The course begins with an examination of the structure of language and the varied uses of language in human activity. Against this background the course turns to the question of how children acquire language, with special emphasis on the contributions of cognitive, social, and language-specific factors in this process. Prerequisite: Permission of instructor.

Mr. Bamberg, Ms. Budwig/Offered every year

252 SEMINAR IN AGGRESSION/Seminar

The various forms of aggressive behavior are considered from both a theoretical and practical perspective, with strong emphasis on psychological aspects of aggressive behavior. In addition to obvious forms of aggression–including domestic aggression, homicide, war, and gang violence–aggressive aspects in art, music, sports, and the corporate world are considered. Prerequisite: Psychology 101 (Psych 173 helpful but not required).

Mr. Rosenbaum/Offered every year

253 NARRATIVE DISCOURSE/Seminar

Relates linguistic, cognitive, and social/cultural factors involved in narrative activities such as telling stories, giving testimonies, route descriptions, etc. Special emphasis is given to the study of narratives from developmental perspectives. Prerequisite: permission of instructor.

Mr. Bamberg/Offered periodically

255 PSYCHOLOGY OF AGING/Seminar

This course introduces the major concepts in human behavior of elderly people, using the family systems perspective and psychodynamic perspective as complementary frameworks for understanding this phase of the lifecycle. Besides the normal transition in the family system and intrapersonal psychology during late life, the course explores clinical intervention to address family and individual dysfunction caused by the stresses of aging. Sexuality, menopause, grief and loss, Alzheimer's and other dementias, retirement and relocation, as well as elder abuse are covered.

The effects of gender, race, and ethnocultural context on the experience of aging are also explored.
Ms. Sassen/Offered every year

256 THE PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE/ Dialogical Lecture

An examination, via reading and discussing short stories, as well as critical scrutiny of various theories, of the diverse manifestations of love, hate, and kindred emotions in everyday life. The relations of emotional life to attitudes and actions are considered throughout the life span and in social-collective phenomena, as well as psychopathology. Enrollment limited. Prerequisite: Psychology 155 and permission of instructor.
Mr. Kaplan/Offered every other year

257 SEMINAR IN FORENSIC PSYCHOLOGY

The seminar is designed to examine the conflicts that inherently arise between the clinical mental health professions and the criminal justice system. Beginning with contrasting assumptions about human behavior, i.e., determinism versus free will, the course deals with the psychological and legal issues involved in matters such as the "insanity" defense, the validity of predictions of dangerousness, involuntary commitments to mental hospitals, the right to receive treatment versus the right to refuse it, and the assessments of competence, informed consent, and passive dangerousness. Prerequisite: permission of the instructor.
Mr. Grisso/Offered every year

258 INTERPRETATION OF BEHAVIOR IN EVERYDAY LIFE/Seminar

This course focuses on learning to apply general psychological principles to complex, everyday behaviors. Behaviors portrayed in movies, novels, newspaper accounts, etc., are examined. The objective is to help students learn to describe and interpret behaviors in a coherent manner. The assumptions (epistemological, ethical, political, and social) that underlie their interpretive framework are emphasized.
Mr. Bibace/Offered every year

259 PSYCHOTHERAPIES/Seminar

A variety of methods of curing symptoms, solving problems in living, and promoting personal development are considered through class discussion and illustration and through intensive reading of primary sources. Prerequisites: Psychology 172 and permission of instructor.
Mr. Cirillo/Offered every year

260 INTERPRETATION OF DREAMS AND OTHER PRODUCTS OF THE IMAGINATION/Seminar

Deals with the exposition, application, and critical evaluation of various systems for the interpretation of dreams and other products of the imagination (poetry, art, mythology). Included for examination are the theories of Freud, Jung, Boss (phenomenological), May (existential), and Burke/Kaplan (genetic-dramatism). Problems of validity of interpretation are discussed, and the relation of dream interpretation to the interpretation of other products of the imagination is examined. Open to juniors, seniors, and graduate students. Prerequisite: Psychology 155 and permission of instructor. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered every other year

261 HUMAN NEUROPSYCHOLOGY, PARTS I and II/Lecture, Discussion
Approximately ten prominent lecturers review and discuss current research. Topics include overview of brain organization, brain electrical potentials, cerebral dominance, neuroanatomy and pathology of language, bilingualism, emotion, and psychosurgery. Yearlong course; divisible. Open to advanced undergraduates and graduate students.
Ms. Oscar-Berman, Ms. Kaplan/Offered every year

262 COMMUNICATION: VERBAL AND NONVERBAL/Seminar
Deals with (1) an analysis of the term *communication* and (2) a study of the varieties of communication patterns for different populations.
Mr. Wiener/Offered periodically

263 PERCEPTUAL DEVELOPMENT/Seminar
Addresses the development of visual, auditory, tactile, and kinesthetic abilities during the first two years of life, with special emphasis on visual development. Topics include anatomical and neurophysiological development of sensory systems, space perception, object perception, speech perception, face perception, formation of perceptual categories, and intersensory integration. Several theoretical viewpoints are studied: Gestalt psychology, E. Gibson, Piaget, and T.G. Bower. The questions raised throughout the course explore what components of perception are innate, and what components result from maturation, from experience, or from an interplay between genetic and experiential factors. Prerequisite: permission of instructor.
Ms. Wiser/Offered every other year

264 THEORY AND RESEARCH IN SOCIAL AND PERSONALITY DEVELOPMENT/ Seminar
This course explores theories and research on the socialization and individuation (and their interaction) of the developing infant, child and adolescent. Contributions of the child, the family, the larger sociocultural context and their interplay will be highlighted. Topics covered include parent-child attachment, temperament, peer relations, prosocial behavior, moral and ego development, and sex-role socialization. Research methods and analysis in developmental research (e.g., modeling growth and change) are addressed.
Ms. Grolnick/Offered periodically

265 CULTURAL IDENTITY AND NATION-STATE/Seminar
The course focuses on the construction, replication, acceptance, and rejection of the meaning of one's cultural identity, both historically (in the social sphere) and psychologically (in the individual sphere). In addition to reviewing relevant theoretical constructs, there is a specific focus on one or more particular cases.
Mr. Wertsch/Offered periodically

267 BIOLOGICAL DETERMINISM AND BEHAVIOR/Seminar
Beginning with the deterministic conceptions of its participants, this course explores some intellectual history and contemporary data concerning the idea that behavior is determined by evolutionary history and necessity. Limited to twenty students.
Mr. Thompson/Offered every year

268 COMMUNICATIVE DEVELOPMENT/Seminar
Focuses on various approaches to an understanding of human communication from

an interdisciplinary perspective. The course explores the relationship between social, cognitive, and linguistic factors in children's communicative development. Prerequisite: permission of instructor.
Ms. Budwig/Offered periodically

269 MOTIVATION/Seminar
The concept of motivation is examined. Several theoretical models are discussed, including those of psychoanalytic, ethological, and learning theories.
Mr. Stevens/Offered every year

270 ADVANCED TOPICS IN SOCIAL PSYCHOLOGY/Seminar
An intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; and social/situational determinants of normal, everyday behavior and of antisocial behaviors such as violence, criminality, and riots. Ordinarily limited to senior majors in psychology or sociology. Prerequisite: permission of instructor.
Mr. Laird/Offered periodically

271 THEORIES OF FAMILY PROCESSES/Seminar
This course is designed to expose students to the major theories of family processes (e.g., biological, psychodynamic, family life cycle, structural, and behavioral views). Particular emphasis is placed on how the family as a system responds to stress, such as developmental shifts in its members, illness, and psychological disorder. Film and literature portrayals of families are utilized by students to demonstrate their understanding of the various models presented. Prerequisite: permission of instructor.
Ms. Azar/Offered every year

273 CRITIQUE OF PSYCHOLOGICAL THEORIES AND APPROACHES TO SOCIAL SCIENCE/Seminar
A systematic critique of various approaches to an understanding of human behavior and the functioning of the human mind that are operative on the current scene. The approaches examined include psychoanalysis, sociobiology, Piagetian theory, cognitive science, and phenomenological psychology. Open to seniors and graduate students. Enrollment limited. Prerequisite: permission of instructor and Psychology 155 for undergraduate psychology majors. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

274 DEVELOPMENTAL PSYCHOBIOLOGY/Seminar
The biological foundations and correlates of behavioral development are discussed, with emphasis on the perinatal period. Examples are drawn primarily from the animal literature (rodents, birds, infrahuman primates), treating psychobiological development from ethological and ecological perspectives. The neurological and physiological antecedents of human development are discussed where feasible, and particularly with reference to developmental disorders. Topics include: neural and hormonal development, plasticity of visual and olfactory development, early learning and memory, development of bird song, parental behavior, early stress, developmental antecedents of sexual and sexually-dimorphic behaviors, psychobiological aspects of autism and attention deficit disorder. Open to advanced undergraduate and graduate students. Prerequisite: permission of the instructor.
Mr. Schoenfeld/Offered every third year

275 LANGUAGES OF INDIVIDUALISM AND COLLECTIVISM/Seminar
The course is about psychological and semiotic processes associated with the value systems of various groups, especially as they reflect individualist or collectivist orientations. The course focuses on relationships between forms of discourse and forms of thought.
Mr. Wertsch/Offered periodically

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM, AND SYMBOL/Seminar
A close examination of the processes of symbol formation and symbol interpretation in everyday life activities, in social and religious myths, and in dreams and literature. Both cultural and individual manifestations of symbol formation are examined, and various frameworks for the interpretation of symbols are critically discussed. Open to seniors and graduate students. Enrollment limited. Prerequisite: permission of the instructor and Psychology 155 for undergraduate psychology majors. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

277 THE CREATIVE PROCESS/Seminar
A critical examination of a number of attempts, in the humanities and human sciences, to describe and/or explain manifestations of creativity in the arts, sciences, and other domains. Major focus is on the factors presumably constituting the creative act, or inherent in creative functioning. Subsidiary attention is paid to conditions in the cosmos, society, or the personality structure supposedly facilitating or inhibiting creative functioning. Among the theorists considered are philosophers such as Aristotle, Kant, Hegel; critics such as Coleridge, K. Burke, A. Koestler; psychoanalysts of various persuasions and degrees of clarity, such as Freud, Kris, Rybroft, Jung, Neumann, Arieti, et al.; and psychologists from various schools. Enrollment limited. Prerequisite: permission of instructor and Psychology 155 for undergraduate psychology major. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

278 COGNITIVE DEVELOPMENT FROM INFANCY TO ADOLESCENCE/Seminar
Focuses on an examination of selected research studies and theoretical accounts of concept development, memory, reasoning, and communication with special emphasis on Piagetian and Vygotskian perspectives. Prerequisites: permission of instructor.
Ms. Uzgiris/Offered periodically

279 CULTURAL DIVERSITY AND THE RESEARCH PROCESS/Seminar
Participants in this seminar examine the concept "cultural diversity" as it applies to research design and to "real world" applications of research results. The course proceeds through some discussion of the historical basis for misrepresentation of women and people of color in the experimental realm. Next we derive some basic principles of diversity from Afrocentric, feminist, and (tentatively) Native American perspectives. Participants work together to formulate a possible framework for use as a basis for critical review of research. In particular, we consider research that includes gender and ethnicity as variables, and research that comes under the heading "cross-cultural."
Ms. Wells/Offered periodically

280 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY, AND THEORY OF INTERPRETATION/Seminar

A critical examination—in light of current views on the nature of interpretation and the nature of signs and symbols—of various conceptions of human development advanced by a variety of thinkers. Although there is a special emphasis on "depth developmental psychologies" (e.g., Freud, Jung, and their disciples and followers), consideration also is given to the developmental perspectives of Piaget, Werner, and Vygotsky. Focus is on the extent to which conceptions of development, descriptions of development, and "explanations" of development are rooted in tacit commitments of the various theorists to unexamined dogmas as to the nature of reality, the place of mind in nature, the order of values, and the bases for interpretation of signs and symbols. Among the hermeneuticists and semioticians whose work is examined are Cassirer, Gadamer, Ricoeur, Burke, and Culler. Two-semester course. Prerequisite: permission of the instructor. Psychology 101 is *not* a prerequisite.
Mr. Kaplan/Offered periodically

281 SEMINAR IN ANIMAL SOCIAL LIFE/Seminar

The day-to-day social life of animals ranging from bees and wasps to birds to monkeys and apes will be investigated. Each year the seminar focuses on one or more topic areas including development, parent-offspring relations, relations among the sexes, territorial defense and aggression, and/or others of interest to its participants. Each student makes a class presentation and writes a substantial paper which must focus both on fact and theory. Permission of the instructor is required, and priority will be given to students who have taken Psychology/Biology 135.
Mr. Thompson/Offered every year

282 SELF AND EMOTION/Seminar

This course focuses on the processes by which self-knowledge and self-awareness are developed and maintained. Other topics include the development of self-conceptions, self-consciousness, the understanding and control of one's own actions, self-blame, and the effects of actions on attitudes and feelings. Open to students with strong backgrounds in psychology, by permission only.
Mr. Laird/Offered periodically

283 HISTORICAL BACKGROUND OF CONTEMPORARY PSYCHOLOGY/Seminar

Includes an appreciation of the generative ideas and world hypotheses underlying contemporary psychological approaches and traces the earlier manifestations of these ideas and world hypotheses in intellectual history or history of ideas. Psychology 101 is *not* a prerequisite. Permission required.
Mr. Kaplan/Offered every other year

284 PSYCHOLOGY AND RELATED DISCIPLINES/Seminar

Deals with the linkages or purported linkages between psychology and literature, psychology and art, psychology and law, psychology and religion, psychology and philosophy, etc. Designed to deal with the two-way relations between various disciplines and psychology and the challenges that these paired disciplines pose for each other. Prerequisite: permission of instructor.
Mr. Kaplan/Offered periodically

285 EMOTION AND INTERPERSONAL RELATIONSHIPS/Seminar

What are emotions and how do they affect our behavior and our relationships? The course examines a number of theories about different emotions and our relations with others. Prerequisite: permission of the instructor.
Mr. deRivera/Offered every other year

286 CROSS-CULTURAL PERSPECTIVES ON HUMAN DEVELOPMENT/Seminar

Studies of perception, cognition, social relations, and moral reasoning in contrasting cultural environments, especially during childhood, are examined with a view toward clarifying the role of cultural specificity in the development of human competence. Learning about the cultural diversity of childhood is undertaken to facilitate discussion of several conceptions of the impact of cultural context on human functioning. Prerequisite: permission of the instructor.
Ms. Uzgiris/Offered every other year

287 SELECTED PROBLEMS IN PSYCHOBIOLOGY/Seminar

An advanced seminar course that discusses contemporary issues in psychobiology. In some cases recent theoretical advances are the focus of the seminar, while in other cases, new research methodologies may be the focus. The course is designed in collaboration with the students and with the goal of keeping them abreast of the latest developments in neuroscience and psychobiology.
Staff/Offered periodically

288 LOGICAL COGNITION IN ADULTS AND CHILDREN/Seminar

Covers in depth the current theoretical developments and empirical findings in the areas of logical reasoning in adults and children, especially in linguistic contexts. The course examines the extent to which logical principles are known by adults and children, the way in which that knowledge is represented mentally, and the way in which it may be acquired. The relations between logical development and language development are examined. The contrasts and connections with the Piagetian perspective are discussed. The aim of the course is to enable students to continue reading on their own in these areas after this introductory background. Prerequisite: permission of instructor.
Ms. Joffe Falmagne/Offered periodically

289 MIND IN A SOCIOCULTURAL CONTEXT/Seminar

This is a course designed to explore the ways in which historical, cultural, and institutional settings shape and are shaped by psychological processes. The focus is on the comparative analysis since this provides one of the best ways to understand the role of the types of settings of interest. Analyses are made of ways in which theoretical approaches, as well as subjects of studies, reflect sociocultural settings. Special emphasis is given to ideas from the sociocultural approach developed by Vygotsky and other related theorists. Open to seniors. Prerequisite: permission of instructor.
Mr. Wertsch/Offered every year (Except in 1992/93)

292 COGNITIVE NEUROSCIENCE/Seminar

This course introduces students to the emerging field of cognitive neuroscience. The relationships between cognitive processes and underlying neural mechanisms are explored. The neural bases of memory, visual integration, motor/response control, attention, and higher cognitive operations are considered. Models of cognitive processes are analyzed in neurobiological terms, with emphasis on providing an

integration of concepts from the cognitive sciences, physiology, neuroscience, and computer science. Consideration of research approaches in cognitive neuropsychology, computational modeling, neuroimaging, and electrophysiology are discussed.
Staff/Offered periodically

294 NEUROANATOMY AND BEHAVIOR/Seminar
A systematic exploration of the organization and function of the human nervous system. Topics include relationships of cortical and subcortical structures of the brain with the spinal cord and peripheral nerves, and the organization of higher brain circuits that form the anatomical bases of movement, perception, emotion, memory, and thought. Clinical examples bridge neuroanatomy with the neurological and neuropsychological disciplines. Prerequisite: Psychology 141 or permission of the instructor.
Mr. Schoenfeld/Offered every third year

295 NEUROENDOCRINE MECHANISMS OF BEHAVIOR/Lecture/Seminar
A comprehensive examination of how neuroendocrine systems influence mammalian behavior. Initially, anatomical and physiological bases for interaction of the nervous and endocrine systems and the various classes of chemical signaling and major neuroendocrine pathways are reviewed. Neuroendocrine control of behaviors such as feeding, drinking, reproduction, and learning are then discussed with emphasis on how different classes of neuroendocrine signals individually and interactively influence specific behaviors. Application of new approaches to the study of the neuroendocrinology of behavior is included. Prerequisite: Psychology 141.
Staff/Offered every year

298 SUPERVISED INTERNSHIP IN PSYCHOLOGY/Practicum
Supervised practical experience in a work setting relevant to a topic selected by the student from the subject matter of a psychology course taken previously, with associated bibliographical research. Evaluation principally on basis of term paper integrating relevant literature and practicum observations. Enrollment must be approved by course coordinator in advance of registration.
Staff/Offered periodically

299 HONORS IN PSYCHOLOGY: SENIOR YEAR/Tutorial
Students carry out a research project under the direction of a member of the staff. Prerequisite: permission of department.
Staff/Offered every semester

299.1 DIRECTED RESEARCH IN PSYCHOLOGY/Tutorial
An independent study for qualified students not in the Honors Program. Prerequisite: permission of instructor.
Staff/Offered every semester

299.2 DIRECTED READINGS IN PSYCHOLOGY/Tutorial
An independent study for qualified students not in the Honors Program. Prerequisite: permission of instructor.
Staff/Offered every semester

300 COLLOQUY: DEVELOPMENTAL PSYCHOLOGY

Devoted to the presentation and critique of different developmental approaches to the individual and his/her ways of functioning in the world. The approaches considered may include: (1) Piagetian, (2) organismic-developmental, (3) cultural/historical approaches to psychology, (4) Freudian and neo-Freudian, and (5) contrasting nativist or information-processing views. The aim is to acquaint the participants with sympathetic expositions of several points of view and the application of these viewpoints to some selected topic of inquiry. Different topics are discussed in different years.
Mr. Bamberg, Ms. Budwig, Mr. Kaplan, Ms. Uzgiris, Mr. Wertsch, and others/Offered every other year

301 PROBLEM, THEORY, AND METHOD IN PSYCHOLOGY/Seminar

During the first semester, each faculty member meets once with the class to discuss his/her perspectives and research. Students prepare brief reports characterizing the links among each faculty member's perspective, research, problems, and methods, as well as a paper summarizing or integrating all of the faculty perspectives. Students also submit a brief statement on the status of their own research. During semester two, the ethics of the research process are discussed. Students also formulate proposals for a poster session held at the end of the term. Constructive criticism of these proposals is offered by other members of the seminar.
Staff/Offered every semester

302 STATISTICAL METHODS/Seminar

The first semester is devoted to a review of the basic concepts of statistics, such as probability, statistical inference, sampling distribution, t-test and regression, and to nonparametric statistics. The second semester introduces analysis of variance and experimental design.
Ms. Wiser/Offered every year

303 ADULT ASSESSMENT/Seminar

Introduction to intellectual and projective testing with adults (first semester) and measurement in clinical psychology (second semester).
Ms. Kellett, Mr. Cirillo/Offered every year

304 CHILD ASSESSMENT/Seminar

Devoted to clinical experiences primarily with children. This includes intelligence and projective testing, diagnostic interviewing, and play therapy with children.
Mr. Ciottone, Ms. Sexton/Offered every year

310 THEORIES OF PSYCHOTHERAPY/Seminar

The concepts guiding various methods of psychotherapy are considered.
Staff/Offered every other year

311 PSYCHOPATHOLOGY/Seminar

Theories of psychopathology are examined. Specific phenomena (traditionally called "syndromes") that illustrate general theoretical presuppositions to diagnostic and therapeutic issues in different historical eras are discussed.
Mr. Bibace/Offered every other year

312 THEORIES OF PERSONALITY/Seminar

Various theoretical approaches to personal consistency and individual differences are examined.

Staff/Offered every other year

313 CLINICAL DEVELOPMENTAL APPROACH TO PSYCHOPATHOLOGY/Seminar

Focuses on the origins and course of behavioral maladaption during the first two decades of life. Problems of assessing and treating psychological disorders are viewed from a developmental perspective, with connections being drawn between normal and abnormal growth processes. In particular, pathological symptomology is related to developmental issues such as early biological regulation, attachment, the family context, peer relations, intellectual development, self-control, sex-role differentiation, and personal efficacy. Selected topics include childhood depression, schizophrenia, eating disorders, borderline states, aggressive and other emotional disturbances, and learning disabilities.

Mr. Bibace/Offered periodically

314 THEORIES OF LANGUAGE DEVELOPMENT/Seminar

Beginning with an examination of the structure of language and the varied uses of language in human activity, the course critically examines major theories of how language is acquired by children. Approaches considered may include: (1) nativist, (2) cognitive interactionist, (3) social interactionist, and (4) functionalist. The aim of this seminar is to enable students to integrate current research in the area of language acquisition with developmental theorizing.

Mr. Bamberg, Ms. Budwig/Offered periodically

315 IMITATION, INTERNALIZATION, IDENTIFICATION/Seminar

Concerned with processes involved in self-other differentiation and the influence of significant others in the construction of the self. The writings of J.M. Baldwin, J. Piaget, G.H. Mead, L. Vygotsky, and others pertaining to these processes are discussed, and relevant research evidence is considered.

Ms. Uzgiris/Offered every other year

316 SENSORY PROCESSES AND PSYCHOPHYSICS/Seminar

Psychophysical concepts and methods are discussed, including magnitude estimation and multidimensional scaling. Particular attention is paid to those concepts and methods relevant to studies of taste, smell, and flavor.

Mr. Stevens/Offered periodically

317 BEHAVIOR IN INFANCY/Seminar

Proceeds from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the way infants organize their functioning in the world. Different topics are chosen for an in-depth examination in different years.

Ms. Uzgiris/Offered every other year

318 PIAGET'S THEORY/Seminar

The basic concepts in Piaget's theory of development are critically studied through intensive reading of a selection of his writings. The historical roots of Piaget's concepts, as well as their use by him throughout his lifetime, are considered. The aim of the

course is not familiarization with any particular topic studied by Piaget, but an in-depth examination of some of his theoretical ideas.
Ms. Uzgiris/Offered every other year

319 GENETIC-STRUCTURAL APPROACH TO MENTALITY/Seminar

Devoted to demonstrating how genetic structural approaches, viz., those of Marx, Freud, Jung, Cassirer, Werner, Piaget, and others, deal with the analysis of mentality as revealed in collective and individual activity. Special emphasis on the categories basic to all genetic structural approaches.
Mr. Kaplan/Offered periodically

320 ADVANCED TOPICS IN COMMUNICATION/Seminar

Various theories of human communication are critically examined. Special emphasis is placed on theoretical and methodological issues involved in the study of how meaning is established in social interaction. Specific topics vary from year to year depending on participants' current research interests.
Ms. Budwig, Mr. Bamberg/Offered periodically

321 TOPICS IN DISCOURSE ANALYSIS/Seminar

In the first part of the semester, we explore the basic question of how coherence in the monologue (life stories, reports of particular events, route description, etc.) as well as in multiparty interactions is achieved. In the second part of the semester we apply some of these issues to ongoing research projects.
Mr. Bamberg/Offered periodically

322 PSYCHOLOGY OF LEARNING/Seminar

Theories, methods, and findings in the psychology of learning are discussed. Attention is given to controversial issues in discrimination learning.
Mr. Stevens/Offered periodically

330 PSYCHOBIOLOGICAL PERSPECTIVES IN PSYCHOLOGY/Seminar

A discussion of current issues, problems, and concepts in psychology from the perspective of psychobiology. Students are encouraged to suggest topics of personal interest for discussion within this framework. Possible topics include: biological aspects of mental disorders (schizophrenia, attention deficit disorder, autism, anxiety, depression, etc.), brain lateralization and localization of function, philosophy and psychobiology, the psychobiology of masculinity and femininity, the psychobiology of emotion, and the role of the brain in social behavior.
Mr. Schoenfeld/Offered periodically

335 SOCIAL EVOLUTION/Seminar

An ongoing colloquy on the evolutionary perspective (in the broadest sense) designed for graduate students in psychology, biology, and geography. Each year the participants agree on a conceptual problem they want to explore during the sessions of the seminar. In recent years, sample problems have included the possible significances of sociobiology to contemporary psychology, naturalism in psychology, neo-Lamarkian approaches to evolutionary theory, the concept of levels of analysis, and dialectical approaches to the evolution of a humane society. Interested graduate students should contact the instructor so that topics can be decided and reading materials can be made available.
Mr. Thompson/Offered periodically

340 EMOTION AND INTERPERSONAL RELATIONS/Seminar

Uses our knowledge of various emotional transformations (e.g., changes in self-boundary) to develop a precise language for the description of interpersonal phenomena such as merger-separation, dynamics, identification, and the dynamics of family constellations.

Mr. deRivera/Offered every other year

341 LOGIC, LANGUAGE, AND MIND/Seminar

The core questions to be addressed in this seminar concern the relations between logic and mind, and the role of language in logical knowledge. We read and discuss relevant cognitive, developmental, linguistic, and philosophical works. After a brief introduction to some formal systems of logic, we examine theoretical and empirical work on logical thought; philosophical work on the foundations of logic; various relevant approaches to semantics (including possible world theory and situation semantics); and cognitive and philosophical discussions of the issues concerning human rationality. Regarding the role of language in logical knowledge, we examine how the relation between logic and language has been treated in philosophy and semantics, and we examine developmental discussions of the relation between language and thought as these inform our questions above, specifically, language and logical knowledge. It is assumed that most students will be unfamiliar with this area initially, and the seminar is structured so as to be self-contained and cumulative for all students.

Ms. Joffe Falmagne/Offered periodically

343 CHEMORECEPTION/Seminar

Selected current topics in taste and smell are examined.

Mr. Stevens/Offered periodically

357 SYMBOLIZATION AND SYMBOLIC ACTION/Seminar

Focuses systematically, and in detail, on one or more of the major approaches to symbolism, symbolization, and symbolic action. The approaches, considered from time to time, include those of Freud and the psychoanalysts; that of Jung and his followers; those of philosophers, such as Ernst Cassirer and Paul Ricoeur; anthropologists such as Victor Turner, Edmund Leach, or Clifford Geertz; literary critics such as Kenneth Burke, Northrop Frye, or Frederic Jameson; semioticians such as Roland Barthes or Umberto Eco; and psychologists such as Werner and Kaplan. Then we focus mainly on the seminal writings of Kenneth Burke, examining Burke in the context of these other approaches.

Mr. Kaplan/Offered periodically

366 CURRENT TOPICS IN COGNITIVE SCIENCE/Seminar

The general questions in this seminar concern the organization of mind and the representation and development of knowledge. Specific topics vary from year to year. Topics include language and mind; concepts and concept acquisition; deductive inference; constraints on induction and cognitive development; theoretical issues in accounting for the acquistion of novel knowledge; situated versus formal theories of knowledge representation. Psychological and philosophical material is discussed, and extensive lists of references are provided for further use.

Ms. Joffe Falmagne/Offered every other year

380 PSYCHOTHERAPY PRACTICUM/Practicum
Supervised experiences in psychotherapy.
Staff/Offered every year

381 FAMILY THERAPY PRACTICUM/Practicum
Practicum training in family and couple therapy and group parent training.
For third-year clinical students.
Ms. Azar/Offered every semester

382 SEVERE PSYCHOPATHOLOGY PRACTICUM/Practicum
Mr. Bibace/Offered every year

383 BEHAVIOR MODIFICATION PRACTICUM/Practicum
Staff/Offered periodically

384 CONSULTING PRACTICUM/Practicum
Mr. Bibace/Offered periodically

385 CHILD/PLAY THERAPY PRACTICUM/Practicum
Ms. Grolnick/Offered every year

386 NEUROPSYCHOLOGICAL ASSESSMENT/Practicum
An overview of the structure and function of the central nervous system is presented. Emphasis is on quantitative and qualitative analyses of standardized and experimental tests of cognitive functions useful in differential diagnosis of neurological syndromes.
Ms. Kaplan/Offered every year

387 ETHICS IN CLINICAL PSYCHOLOGY/Practicum
For first-year clinical students.
Mr. Baker, Staff/Offered every year

388 INTERVIEWING PRACTICUM/Practicum
For first-year clinical students.
Mr. Baker, Staff/Offered every year

389 CLINICAL WORKSHOP/Seminar
For all clinical students in residence.
Clinical Staff/Offered every year

399.1 DIRECTED RESEARCH IN PSYCHOLOGY/Tutorial
Direction of individual students in their research.
Staff/Offered every semester

399.2 DIRECTED READINGS IN PSYCHOLOGY/Tutorial
A critical analysis of literature in areas related to individual research.
Staff/Offered every semester

399.9 INTERNSHIP IN PSYCHOLOGY/Practicum
Staff/Offered every semester

Russian

See Department of Foreign Languages and Literatures.

Screen Studies

See Department of Visual and Performing Arts.

Sociology

DEPARTMENT FACULTY

Bruce London, Ph.D., *chair*: technology and society, community, sociology of the Third World, social demography

Patricia M. Ewick, Ph.D.: research methods, gender, law, deviance

Deborah M. Merrill, Ph.D.: research methods, family, aging, medical sociology, social demography

Robert J. S. Ross, Ph.D.: urban studies, political sociology, political economy, social policy

Marc W. Steinberg, Ph.D.: historical sociology, social movements, political sociology, social theory, culture

Shelly Tenenbaum, Ph.D.: Jewish studies, race/ethnicity, social stratification

EMERITI

Ruth Harriet Jacobs, Ph.D.

Sidney M. Peck, Ph.D.

UNDERGRADUATE PROGRAM

Sociology is the study of society and human variety: of structures, of histories, of biographies. To understand historical and social forces and their relation to individual lives is a requisite first step to acting with freedom, reason, and historical consequence in dealing with the cultural tasks of our times.

A major goal of the sociology program at Clark is to help persons attain a working knowledge of those theories, concepts, methods, and findings of sociology and related disciplines that are relevant to understanding and affecting the origins, development, maintenance, and change of social institutions and forms of social organization.

The department recognizes that not all students majoring in sociology, or taking a number of sociology courses, will want or need to obtain precisely the same kinds of experiences at Clark. To this end, the program has built in a reasonable degree of flexibility, offering the student choices both of courses within general categories and of practical experiences.

Many sociologists study society in order to change it. As a social science faculty, our department is committed to a humanistic perspective. We are concerned about the human situation and the relevance of our scholarship to societal issues and community problems as well as to our individual lives. We hope to understand the structure and dynamics of human society, on a small or large scale, so that we can contribute to those movements of change in our society that strive to liberate us all from the oppressive conditions of exploitation, discrimination, and alienation.

Sociology is a basis for many different kinds of careers and graduate schools. Feel free to discuss your postgraduate plans with the faculty. Also, ask the department secretary for a copy of our department's handbook (revised yearly) as well as for handouts on employment opportunities and careers.

The departmental major at present consists of ten courses within the department and five additional related courses in other departments selected from a set of focused options; students develop their selections through close consultation with a major advisor. Currently, the ten departmental courses are to be divided as follows:

All majors *must* complete:

100 *Introduction to Sociology*
170 *The Social Research Process*
256 *Class, Status, and Power*
290 *Sociological Theory: Classical*

All majors must also complete 6 additional sociology credits. There are several options available for this portion of the major:

Option A, *Course work*: All six additional credits may be in the form of 200-level sociology courses.

Option B, *Internship:* The internship is designed for students who seek supervised field training in community or organizational settings. One or two internship course equivalents may be applied to major requirements. The remaining four or five credits should be 200-level sociology courses.

Option C, *Thesis:* This is usually the equivalent of four full courses in sociology; it is designed for selected students who wish to devote approximately 50 percent of their senior years to major research problems.

GRADUATE PROGRAM

At the present time, the department is not offering advanced degrees.

COURSES

100 INTRODUCTION TO SOCIOLOGY/Variable format

A general introductory course in the discipline of sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry, and conceptions and analyses of society. The central objective of the course is to encourage students to gain a sociological perspective on human conduct.

Staff/Offered every semester

105 SELF AND SOCIETY/Lecture, Discussion

An examination of the relationship between the individual and the social system. The theories, methods, and findings of social psychology are examined as they illuminate the major, enduring themes that confront human beings over the life cycle individually and collectively: e.g., socialization and the development of identity, conformity, persuasion, aggression and altruism, prejudice, relationship of the individual in community.
Staff/Offered every other year

110 INTRODUCTION TO WOMEN'S STUDIES/Lecture, Discussion

An overview of the field of women's studies, focusing on sociological, historical, psychological, and economic dimensions of the female experience. This course explores: biosocial roots of the sexual division of labor, female socialization, education, sexuality, labor force participation, family roles, aging, the future of feminism.
Ms. Ewick, Staff/Offered every year

150 INTRODUCTION TO PEACE STUDIES

Refer to course description under Peace Studies 170.
Mr. deRivera/Offered every year

170 THE SOCIAL RESEARCH PROCESS/Variable format

Provides a general introduction to both the qualitative and quantitative methods used in sociological research. Students learn about these methods by using them in projects of interest to them. Majors may meet the methods requirement by selecting this course, but the course is also available to nonmajors who wish to learn how to investigate social life. Selected studies in various methods are assigned reading.
Ms. Ewick, Ms. Merrill, Staff/Offered every semester

200 DIRECTED READINGS IN SOCIOLOGY

Offered for variable credit.
Staff/Offered every semester

203 AMERICAN JEWISH LIFE/Variable format

The main objective of this course is to provide students with an introduction to the social scientific study of American Jewry. We survey a broad range of topics, such as immigration, economic mobility, intermarriage, Jewish feminism, American Judaism, ethnic identity, anti-Semitism, and political behavior. Throughout the semester, comparisons between Jews and other groups will be highlighted. (Formerly Sociology of Jewish Americans)
Ms. Tenenbaum/Offered every year

204 THE HOLOCAUST: A STUDY OF GENOCIDE/Variable format

This course enables students to gain an understanding of the origins and history of the Holocaust. Several important topics to be analyzed are: the roots of Nazi anti-Semitism, the implementation of the "Final Solution," and acts of resistance. Throughout the course, we will confront moral issues raised by the study of the Holocaust.
Ms. Tenenbaum/Offered every year

232 SOCIAL DEMOGRAPHY/Variable format
Demography is the statistical description and analysis of human populations, including birth, death, and migration rates; age and sex structures; and characteristics such as marital status, occupation, religion, and race. *Social Demography* focuses on relationships between and among (a) social, cultural, political, and economic forces and (b) population structures, processes, and characteristics. Consideration of demographic factors contributes to our understanding of social issues such as the aging of the population, the changing status of women, rapid world urbanization, Third World economic problems, food production shortages, and environmental pollution.
Mr. London, Ms. Merrill/Offered periodically

239 AGING AND SOCIETY/Lecture, Discussion
This course focuses on the multiple realities of aging in human society. Specific attention is devoted to the history and social role of the aged in the United States. The impact of social structure on the aged requires examination of key issues confronting the elderly, such as employment, retirement, income, housing, health care, education, sexuality, and death. A variety of social programs designed for the aged are critically evaluated. (Formerly Social Gerontology)
Ms. Merrill, Staff/Offered every year

241 SOCIOLOGY OF MEDICINE/Variable format
Examines health and illness as social phenomena. Topics to be covered include social causes of disease, theories of individual response to illness, and the sociology of institutions that attempt to care for and cure the sick. The course also addresses problems in the health care system at the national level and explores solutions to the mounting "crisis" in the provision of health services. Useful to those with general interest, as well as students considering health-related careers.
Ms. Merrill, Staff/Offered every year

243 POLITICAL SOCIOLOGY/Variable format
Examines structures of social class and power in relationship to stability, conflict, and change in government. Focuses on government relationship to businesses, the economy, and other political interests and behavior. Compares the United States to other industrial countries.
Mr. Ross, Mr. Steinberg/Offered every year

244 THE COMMUNITY/Lecture, Discussion
An analysis of one of the most general and enduring ideas at the heart of the discipline of sociology: the idea of community. How do we define "community"? What is the meaning of community for individuals and groups? How has the nature of community changed over time? And what are the central concepts, issues, theories, and methods employed by sociologists in both the general study of community and the specific writing of community studies?
Mr. London/Offered every year

246 SOCIAL PLANNING AND SOCIAL POLICY/Variable format
Introduces the field of social policy. Each semester focuses on a particular theme. Past themes include: poverty, urban planning and social policy, community planning, social consequences of industrial change.
Mr. Ross/Offered every other year

247 CITIES AND SUBURBS/Variable format

Introduces urban sociology. Examines structure and development of American metropolitan areas and community power, with special attention to changing functions of city and suburb. Examines different ways of life in city and suburb.
Mr. Ross/Offered every year

248 SEMINAR IN GLOBAL CAPITALISM

Examines processes of economic and social development in two regional frameworks: changes in the structure of industrial regions of the advanced capitalist countries and changes in the structure of developing and more peripheral regions. The conceptual framework is that of a global capitalist system undergoing significant transformation in the deployment of labor and capital.
Mr. Ross/Offered every year

249 THE SOCIOLOGY OF DEVELOPMENT AND UNDERDEVELOPMENT/Lecture, Discussion

This course examines and analyzes the transformation of post-colonial, "Third World" societies undergoing capitalist or socialist development. It discusses theories of "development" in their social, economic, and demographic context. It also explores the international division of labor, labor migration, urbanization, and social and racial stratification.
Mr. London, Staff/Every other year

250 CRIMINOLOGY/Variable format

Explores the nature of crime in society, theories about victims of crime, theories about why people commit illegal acts, and the kinds of crime that occur in American society.
Staff/Offered periodically

251 MEDIA AND SOCIETY

Analyzes the history and development of the modern media of mass communications and explores key issues in the sociological analysis of popular culture. A variety of theoretical and methodological approaches to the sociology of mass communications is presented.
Staff/Offered periodically

252 RACE AND AMERICAN SOCIETY

This course focuses on the political, economic, and social lives of Native Americans, Latinos, African Americans, and Asian Americans. Some of the specific topics discussed are racism, the civil rights movement, gender, class, popular culture, and public policies. A central assumption of this course is that in order to understand contemporary race relations, we must turn to the historical experience.
Ms. Tenenbaum/Offered every year

255 THE FAMILY/Variable format

Critical, historical, and feminist perspectives on the institutions of marriage and the family. The seminar considers comparative, historical, and other analyses of the social role of women vis-a-vis the role relationships inherent in marital institutions.
Ms. Merrill/Offered every year

256 CLASS, STATUS, AND POWER/Variable format

An analysis of the nature and dynamics of social stratification in contemporary society.

Economic and political power of the upper class, social mobility, the process of deindustrialization, feminization of poverty, and the intersection of race and class are studied.
Ms. Tenenbaum, Mr. Ross/Offered every semester

257 CITIES IN GLOBAL PERSPECTIVE/Variable format

There are four dimensions of comparison upon which this course is based: historical; cross-national within advanced capitalism; cross-system of social relations, i.e., capitalist as compared to socialist urbanization; and finally, a contrast between the processes and structures of urbanization in the First and Third Worlds.
Mr. Ross/Offered periodically

259 SOCIOLOGY OF ORGANIZATIONS/Lecture, Discussion

This course examines the theory and practice of organizations from a sociological perspective. Through lecture, directed readings, research, and discussion, students examine major concepts in the historical development of modern organizations (e.g., bureaucracy) and apply their learning to the investigation of selected contemporary problems and issues of complex organizations.
Ms. Ewick/Offered every year

262 SOCIOLOGY OF LAW/Variable format

This course examines the relationship between law and other aspects of social life, specifically, stratification, morphology, organization and culture. The course compares law with other methods of social control. Special attention is directed to the comparison of law and custom. The course also analyzes the three functions of law: deterrence, conflict resolution, and social engineering. Using both historical and cross-cultural materials, the course examines the validity of such issues as legal evolution and equality under the law. The course utilizes the theoretical works of Marx, Durkheim, and Weber to analyze the nature of law as either a dynamic or static process in society.
Ms. Ewick/Offered periodically

263 DEVIANCE/Variable format

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance and (2) to examine conceptual frameworks out of which contemporary definitions of deviance emerge.
Ms. Ewick, Staff/Offered every year

265 SOCIAL MOVEMENTS/Variable format

Discusses the general characteristics of modern social movements, with modern American movements (feminist, civil rights, etc.) used as examples. Problems of recruitment, organization, and ideology are analyzed. The form of the course depends on the number of students who register.
Mr. Steinberg, Mr. Ross, Staff/Offered every year

275 RELIGION AND SOCIETY/Variable format

The interaction between religion and contemporary society (particularly in the United States) is characterized by conflict and controversy concerning the unique relationship between religious organizations and "the State." This course will attempt to analyze the effect of religious organizations on the culture, structure, and policies of

contemporary society by exploring, historically and cross-culturally, the influence of religion on social existence.
Staff/Offered periodically

280 SOCIOLOGY OF TECHNOLOGY/Lecture, Discussion
Analyzes the implications of technological change for society and the effect of social processes on technological development. Some of the specific topics discussed are: the differing utopian, dystopian, and Marxist views of technology and society; the relationship between technology and environment; the notion of "the imperatives of technology" and the rise of corporate capitalism; and computers and society.
Mr. London, Staff/Offered every year

285 SPECIAL TOPICS IN PEACE STUDIES
Refer to Peace Studies 285.
Staff/Offered periodically

290 SOCIOLOGICAL THEORY: CLASSICAL/Variable format
Beginning with European writings of the late eighteenth century and extending to early American writings in the first decades of the twentieth century, the course focuses on central themes and problems addressed by a wide variety of social philosophers and sociologists. Emphasis is placed on grand theoretical models of society, conceptions of order, structure and change, and the social construction of the individual. The course presents a survey of main theorists from a critical and comparative perspective. The traditional corpus of nineteenth-century theory (Marx, Durkheim, and Weber) is discussed, though the course also seeks to address less traditional works (including those in utilitarianism, feminism, Afrocentrism, and human ecology). Meets social theory requirement for majors.
Mr. Steinberg/Offered every semester

291 SOCIOLOGICAL THEORY: CONTEMPORARY/Variable format
Social developments in the United States during the post-World War II epoch have given rise to a variety of theoretical views in the field of sociology. Diversity of approach and fragmentation of theoretical stance are related to significant changes in social structure and political economy of the United States during the past four decades. The relationship between social theory and political ideology is considered throughout.
Mr. Steinberg, Staff/Offered periodically

297 TOPICS IN SOCIOLOGICAL THEORY/Variable format
For those who have already taken classical or contemporary theory and also for those who have not done in-depth study of particular theorists but wish to do so.
Mr. Ross, Staff/Offered every other year

299 THESIS STUDIES
Independent study submitted for honors consideration for senior sociology majors. Students should sign up with the faculty member whose areas of interests are most suited to their own. Emphasis is on independent research undertaken with faculty guidance and supervision. Generally requires two credits in each semester of senior year and culminates with a thesis submitted for honors consideration.
Staff/Offered every year

299.9 INTERNSHIPS IN SOCIOLOGY
Supervised field training in community and organized settings. This is the equivalent of from one to four full courses in sociology. Variable credit.
Staff/Offered every semester

Spanish

See Department of Foreign Languages and Literature.

Theater Arts

See Department of Visual and Performing Arts.

Visual and Performing Arts

Gerald R. Castonguay, Ph.D., *chair:* musicology

Clark's Department of Visual and Performing Arts is composed of individual academic programs in art history, studio art, music, screen studies, and theater arts. Whether students prefer to study the history, criticism, philosophy, and theory of the arts or to engage in the creative activity of studio work, composition, or performance, there are courses, concentrations, specializations, and majors available. A major in a given area can be the core for a preprofessional program; or, the student may cross traditional disciplinary lines–by double majoring, for instance, or by individually designing a major or combined major that includes two or more areas of study. In consultation with the appropriate program director, students who have an interest in the arts but decide to major in other areas may develop a four or five course sequence as a concentration or an area of specialization. Specific major requirements for the different programs and their course descriptions are listed below under each program heading. Majors and nonmajors are welcome to participate in the department's programs and courses and to attend its many art exhibitions, film presentations, and musical, theatrical, and dance performances.

Art

Because art reflects the trend of thought and the impact of events of its time, it relates to many other areas of study–history, philosophy, and psychology, to name just a few. Study of art thus enhances one's understanding and appreciation of other disciplines. For students interested in the arts, humanities, or social and natural sciences, the study of art can provide both majors and nonmajors with an especially rewarding and enriching part of liberal arts education. Courses and programs in art offer opportunities to develop critical skills, acquire resources for visual thinking and communication, and engage in personal creative expression. And for both future art scholars and professionals, Clark's art programs provide a solid foundation that will serve them well in their graduate studies or careers.

For information concerning majors and courses, see the art history and studio art program entries below.

ART HISTORY AND CRITICISM

PROGRAM FACULTY

Bonnie L. Grad, Ph.D.: modern art

Catherine Levesque, Ph.D.: Renaissance and Baroque art

Rhys F. Townsend, Ph.D.: ancient art and archaeology

PART-TIME FACULTY

Jean Borgatti, Ph.D.: African, Native American, and Oceanic art

Joyce Cohen, Ph.D.: contemporary art

ADJUNCT FACULTY

Paul Burke, Ph.D.

John Conron, Ph.D.

EMERITUS

Samuel P. Cowardin III, Ph.D.: Renaissance, Oriental art

UNDERGRADUATE PROGRAM

The art history major offers a focus within the liberal arts for students interested in the visual arts and the social, cultural, and historical context in which art is created. Majors may specialize in ancient, Renaissance and Baroque, and modern art history, or other areas of special interest. For those seriously considering teaching, museum and gallery work, arts conservation, or arts management, the major provides a solid foundation for graduate study.

THE ART HISTORY MAJOR

A total of sixteen courses are required for the major, ten of which are art history courses.

REQUIREMENTS

1. Art History Courses
   a. 101 and 102: *Introduction to Western Art* (or equivalent courses or superior advanced placement performance)

  b. Four courses specializing in a single area (e.g., ancient, Renaissance/Baroque, modern) including 290, *Senior Thesis in Art History*
  c. Four courses outside the area of specialization
2. Related Courses
   Four courses outside the visual arts but related to the student's area of specialization (e.g., appropriate language courses, or courses in history, literature, music, etc.)
3. Studio Courses
   Any two courses in Studio Art

DOUBLE AND COMBINED MAJORS

Because the study of art history lends itself to interdisciplinary approaches, students may wish to double major in art history and another discipline. In such cases, students may eliminate one course from each of the five required areas (1 a, b, c; 2; and 3), reducing the total number of courses required for the art history major to eleven.

A combined major in art history and studio art, requiring a minimum of eight art history courses, may be developed in consultation with the art history and studio art program directors.

HONORS IN ART HISTORY

The sixteen courses required for the art history major, including the senior honors thesis (299.8) are required for the Honors Program in Art History. The honors student will replace 290, *Senior Thesis in Art History* (from requirement 1 b) with 299.8, *Honors in Art History.*

Students who wish to take Honors in Art History should identify an area of interest, choose an appropriate honors advisor, and apply to the Art History faculty before the end of the junior year. See the course description under Art History 299.8, *Honors in Art History,* for details.

NONMAJORS

All courses and seminars in the art history program are open to qualified nonmajors. Students whose major lies in another discipline can declare a concentration in art history.

Requirements for a Concentration in Art History:
1. 101 and 102: *Introduction to Western Art*
2. Four additional courses, no more than two of which may be in one area of specialization (i.e., ancient, Renaissance/Baroque, modern).

COURSE NUMBERS AND LEVELS

100-104	Introductory courses
105-119	Survey courses in ancient art
120-139	Survey courses in Renaissance and Baroque art
140-149	Survey courses in modern and contemporary art
150+	Survey courses in non-Western art and special approaches to the study of art
205-219	Intermediate and advanced courses and seminars in ancient art
220-235	Intermediate and advanced courses and seminars in Renaissance and Baroque art
240-245	Intermediate and advanced courses and seminars in modern art

COURSES

101 INTRODUCTION TO WESTERN ART I/Lecture, Discussion

A survey of ancient and medieval art, the class devotes the first weeks to an examination of the basic elements of the visual arts and to terminology and methodology to be encountered in discussing works during the semester. We then study selected monuments as exemplars of style and artistic quality in the context of the leading ideas of their respective eras.
Mr. Townsend, Ms. Levesque/Offered every year

102 INTRODUCTION TO WESTERN ART II/Lecture, Discussion

A survey of Western art from the Renaissance to the present, the class devotes the first weeks to an examination of the basic elements of the visual arts and to terminology and methodology to be encountered in discussing works during the semester. We then study selected works as exemplars of style and artistic quality in the context of the leading ideas of their respective eras.
Ms. Levesque, Mr. Townsend/Offered every year

103 MASTERPIECES OF WESTERN ART/Lecture, Discussion

A one-semester survey of topics selected to introduce some of the most basic issues raised in examining a work of art. The works chosen reflect the significant traditions of Western art, while the loose chronological framework serves to link the artists and their works with general notions about our civilization. Artists and monuments studied in the course include the Parthenon, Chartres, Raphael, Michelangelo, Bernini, Bruegel, Rembrandt, Monet, Picasso, and Frank Lloyd Wright.
Ms. Levesque, Mr. Townsend/Offered periodically

105 THE AEGEAN WORLD/Lecture, Discussion

An introductory survey of architecture, sculpture, and painting in Egypt, Mesopotamia, and the Aegean during the Bronze Age, the course covers the Old and New Kingdoms of Egypt; the great dynasties of Sumer, Akkad, and Babylon; and the cultures of the Aegean islands, Crete, and mainland Greece. Examines and compares artistic forms and traditions of each region in order to shed light on the individual religious and social contexts in which they evolved and to reveal the differing conditions under which these civilizations emerged. Highlights the renowned archaeologists whose discoveries have illuminated the history and artifacts of these lands. Includes field trips to area museums.
Mr. Townsend/Offered every other year

106 INTRODUCTION TO ARCHAEOLOGY/Lecture, Discussion

Concentrating on the Mediterranean region, the course traces the history and methods of archaeology–emphasizing its unique combination of the sciences and the humanities–from its faltering but enthusiastic first steps to its technologically advanced state today. Selected case studies, which involve the student's active participation, demonstrate how archaeology illuminated the ancient world. Of special concern the newly developed field of underwater archaeology, which has contributed so much to our understanding of the history of seafaring.
Mr. Townsend/Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL/Lecture, Discussion

Investigates a select number of classical myths and the concept of the "Greek ideal"

as expressed in art, both in classical Greece and Rome and in various later periods, including the twentieth century. We approach the myths from the standpoint of origin and significance, changing modes of representation, and manipulation for political purposes. The concept of the Greek ideal is also examined both as it originally developed and as it was conceived in subsequent ages. Throughout, the changing attitudes towards the classical world and the significance of the classical tradition in art and history are emphasized. Includes field trips to area museums.
Mr. Townsend/Offered every other year

110 ANCIENT GREEK ART/Lecture, Discussion
This intensive survey extends chronologically from the Dark Ages following the collapse of the Minoan-Mycenaean world in the twelfth century B.C. to the close of the Hellenistic period in the first century B.C.; geographically, it reaches from Greece itself westward to the Greek cities of South Italy and Sicily, and eastward to the Hellenized lands of Asia Minor, Egypt, and the Near East. Within this context, discussion includes the concept of artistic originality and stylistic development, the relationship between art and politics, and the contribution of Greek art to the subsequent history of the visual arts in the Western world. Field trips to the Worcester Art Museum and the Museum of Fine Arts in Boston are included.
Mr. Townsend/Offered every other year

111 ROMAN ART AND ARCHITECTURE/Lecture, Discussion
Refer to course description under Classics 111.
Staff/Offered every other year

114 ANCIENT CITIES AND SANCTUARIES/Lecture, Discussion
An introduction to the great urban and religious centers of the ancient world. The course examines the concept of the city as it first evolved in the Near East and as it developed in classical Greece and Rome. Emphasis is placed both on the design and structure of urban spaces and on the factors affecting town planning. We discuss the famous ancient sanctuaries not only as areas of religious worship, but also as centers of cultural activity involving theater, art, athletics, and politics. Throughout, both cities and sanctuaries are viewed in their historical setting as part of the larger civilizations which nurtured them.
Mr. Townsend/Offered every other year

120 THE HISTORY OF PRINTS/Lecture, Discussion
An introduction to the development of printmaking in Europe from the fifteenth through the twentieth centuries. The aim of the course is to familiarize the student with the most important graphic techniques and at the same time, to explore evolving attitudes toward prints and printmaking.
Ms. Levesque/Offered every other year

124 NORTHERN RENAISSANCE ART/Lecture, Discussion
An examination of Northern European art–particularly in the Netherlands–during the fifteenth and sixteenth centuries. Particular attention is given to the major innovators of the period: Jan van Eyck, Rogier van der Weyden, Hugo van der Goes, Jerome Bosch, Albrecht Dürer, and Pieter Bruegel. Their work, and that of other artists, is studied in the context of contemporaneous cultural, social, and religious values.
Ms. Levesque/Offered every other year

125 ITALIAN RENAISSANCE ART/Lecture, Discussion

This course examines the development of the Renaissance in Italy during the fifteenth and sixteenth centuries. Concentration on three centers–Florence, Rome, and Venice–places the achievements of individual innovators within a particular cultural context.
Ms. Levesque/Offered every other year

131 BAROQUE ART/Lecture, Discussion

The close study of seventeenth century artists, including Caravaggio, Bernini, Rubens, Rembrandt, Velazquez, and Poussin. Particular consideration is given to how each of these artists express the naturalism, psychological acuity, and religious sensibility that are generally viewed as characteristic of Baroque art.
Ms. Levesque/Offered every other year

134 SEVENTEENTH-CENTURY DUTCH PAINTING/Lecture, Discussion

An introduction to Dutch painting of the seventeenth century. Works by Frans Hals, Rembrandt, Jan Vermeer, Jan Steen, Jacob Ruisdael, and other artists are viewed as part of a wider artistic and cultural context. Throughout the course, emphasis is placed on the relationship between naturalism of representation and the contemporaneous language of symbols.
Ms. Levesque/Offered every other year

140 MODERN ART: NINETEENTH CENTURY/Lecture, Discussion

This course is a survey of the revolutionary movements in European art including Neoclassicism, Romanticism, Realism, and Impressionism. We examine the formal characteristics of these styles and the cultural and social context from which they emerged. In particular, we study the development of landscape painting in England and France, and the origins of an "avant-garde."
Ms. Grad/Offered every other year

141 IMPRESSIONISM/Lecture, Discussion

This course traces the development of Impressionism over three decades: from the early works of Manet to the last Impressionist Exhibition in 1886. We examine in great depth both the stylistic development of individual artists–Manet, Monet, Renoir, Degas, Cezanne, Cassatt, Morisot, and Pisarro–and the cross-fertilization of ideas between and amongst these artists. In addition, we study the highly finished academic paintings of the Jonas and Susan Clark Collection to illustrate what kind of art the Impressionists were reacting against as well as the kind of art that was widely popular at the time Impressionism failed to win critical acceptance. Finally, we consider the social and cultural context from which urban and rural impressionism emerged.
Ms. Grad/Offered every other year

142 MODERNISM/Lecture, Discussion

This course begins where Impressionism ends–in 1886, the year in which the twentieth century is said, by some, to have arrived. After a brief survey of Post Impressionism, we trace the blossoming of the modern imagination as it developed in the modern movements of Fauvism, Cubism, German Expressionism, Suprematism, Constructivism, and Surrealism.
Ms. Grad/Offered every other year

143 ART FROM 1945 TO 1965/Lecture, Discussion

A survey of the major movements of contemporary American and European art,

including abstract expressionism, environments and happenings, pop art, minimalism, earth art, and the new realism. We explore the increasing importance of the commercial environment, popular culture, and technology as a major theme in the art of the sixties.
Ms. Grad/Offered every other year

144 MODERN LANDSCAPE ART: 1750-1970/Lecture, Discussion
This course traces the development of landscape painting in Europe and America from 1750 through the recent past, focusing on both the stylistic development of this art form and the cultural and social context in which it originated and flourished. We examine historical and social factors including urbanization and the birth of modern town planning, sanitation, water supply and park design; industrialization and technology; the rise of tourism; and the "commercialization" of the landscape. Emphasis is on the role of landscape in the development of twentieth-century painting.
Ms. Grad/Offered periodically

145 THE ART OF TODAY: 1960 TO THE PRESENT/Lecture, Discussion
This course examines the evolution of the current art scene and the work of today's artists. We address styles beginning with pop and move on to minimalism, conceptual art, performance art, earth works and environments, video art, installation art, neo-expressionism, and new-image painting. Students are encouraged to analyze the critical themes represented in the shift from modernism to a postmodern aesthetic with emphasis on the changing role of the artist, expectations for the audience, and the nature of the art object itself. Teaching methods include slide lecture, group discussion, video and film presentations, and visits to museum and gallery exhibitions. Art History 143, *Art From 1945 to 1965,* is recommended but not required.
Ms. Cohen/Offered every year

155 ART OF AFRICA, OCEANIA, AND NATIVE AMERICA/Lecture, Discussion
Focusing on the art of the Yoruba of Southern Nigeria, the Northwest Coast Native Americans, and selected cultures of New Guinea, this course aims to develop in the student an appreciation for the art forms, cultural settings, and distinctive aesthetic in non-Western culture. Where possible, students will be expected to make aesthetic and stylistic judgments concerning original material.
Ms. Borgatti/Offered every year

156 ARTS OF BLACK AFRICA/Lecture, Discussion
An introduction to the major traditions of art in the western Sudan and Guinea coast, the Niger delta and equatorial forest, the southern savanna, and southern and eastern African fringe. Emphasis rests on formal, conceptual, and historical links between the cultures and art forms considered.
Ms. Borgatti/Offered every year

157 THE ARTS OF NORTH AMERICAN NATIVE PEOPLES/Lecture, Discussion
The course examines the arts of the Native Peoples of North America, i.e., the arts of Woodland, Southeastern U.S., Plains, Pueblo, Navajo, California, and Northwest Coast Indian groups as well as the arts of Alaskan and Canadian Eskimos. Emphasis is on the traditions as we know them from the contact period (1500-1900). The approach will combines appreciation of form with understanding cultural context. Pre-contact traditions as we know them from the archaeological record and contemporary

developments in the arts of Native Peoples also are considered.
Ms. Borgatti/Offered every other year

159 SOCIAL VALUES IN TECHNOLOGY AND ART/Lecture, Discussion

A joint venture of the Art History and ETS Programs, this course aims to educate students in the history of technological development and the history of art by studying both analytical texts and artistic interpretations of the changes that technology triggered in society. We focus on the implications of technological change on social values and structural transformations in society. Selected art works reflect both dynamic changes caused by the development of new technologies and how the subject matter of new technologies inspired radical stylistic change. This course offers a novel approach to integrating scientific analysis and the broader perspective of arts historical interpretation.
Ms. Grad and Mr. Renn/Offered every other year

181 ART AS ARTIFACT/Seminar

An intensive study of individual works of painting and sculpture that emphasizes the contribution of media, technique, and context to meaning. Some consideration is given to questions of connoisseurship (attribution and condition) insofar as these factors influence what we see. A number of classes are held at the Worcester Art Museum.
Ms. Levesque/Offered every year

183 ART CRITICISM/Lecture, Discussion

This course surveys the writings of the major American and English art critics active from 1945 to the present. Through these writings of major critics, the student becomes familiar with a variety of methodologies and viewpoints, including formalism, neo-conservatism, Marxism, and feminism. Critics include Clement Greenberg, Harold Rosenberg, Hilton Kramer, Dore Ashton, Lawrence Alloway, Rosalind Krauss, Donald Kuspit, Lucy Lippard, and John Berger, among others. (Readings vary from year to year.) Several field trips to Boston area galleries occur throughout the semester. Writing intensive. Art History 143, *Art From 1945 to 1965*, is recommended but not required.
Ms. Grad/Offered every other year

184 ART IN CULTURE: THE PAINTINGS OF GEORGIA O'KEEFFE/Lecture, Discussion

In this interdisciplinary and introductory course, we examine broad cultural and geographic issues through the focus on the work of Georgia O'Keeffe. Like many twentieth-century modernists, she turned away from the technological urban world to search for elemental landscapes. These she found in New Mexico. From her experiences of the southwestern desert and the rituals of Hispanic and Native American cultures, she forged a spiritual art with moral import that was unique in its time. Readings from various disciplines include Thoreau, Emerson, Paul Tillich, Willa Cather, Mabel Dodge Luhan, Ruth Benedict, and Mircea Eliade.
Ms. Grad/Offered every year

215 THE TEMPLE BUILDERS: ARCHITECTURE IN ANCIENT GREECE/ Lecture, Discussion

Traces the evolution of monumental architecture in Greece from its origins in the Geometric period through its development in Archaic, Classical, and Hellenistic times. Emphasis is on the integration of craftsmanship, or *techne,* with elements of design

in the Doric, Ionic, and Corinthian orders. Discussion includes the relationship between architect and patron, the social role of architecture, and its political impact. In addition, students become familiar with questions and problems of modern investigation and reconstruction of ancient buildings.
Mr. Townsend/Offered periodically

219 SPECIAL TOPICS: ANCIENT ART/Seminar
This seminar introduces students to specific issues and approaches in the study of ancient art. Topics vary each time the seminar is taught. The course develops the student's research, oral presentation, and writing skills through intensive study that is not possible in the context of a survey course. While the seminar is specifically designed for art history majors, qualified students from other disciplines are most welcome. Course may be taken for credit more than once.
Mr. Townsend/Offered periodically

239 SPECIAL TOPICS: RENAISSANCE AND BAROQUE ART/Seminar
This seminar introduces students to specific issues and approaches in the study of Renaissance and Baroque art. Topics vary each time the seminar is taught. The course develops the student's research, oral presentation, and writing skills through intensive study that is not possible in the context of a survey course. While the seminar is specifically designed for art history majors, qualified students from other disciplines are most welcome. Course may be taken for credit more than once.
Ms. Levesque/Offered periodically

248 WOMEN AND ART/Seminar
This course explores both the history of women artists and the circumscribed nature of their professional involvement in the art institutions of their day. It also explores specific topics and questions: women as subjects in art; femininity and masculinity as cultural constructs; the concept of "genius" as myth; and the nature of objectivity. Readings include Linda Nochlin, Thalia Gouma-Peterson, Lucy Lippard, Rozsika Parker and Griselda Pollack, and John Berger.
Ms. Grad/Offered every other year

249 SPECIAL TOPICS: MODERN ART/Seminar
This seminar introduces students to specific issues and approaches in the study of modern art. Topics vary each time the seminar is taught. The course develops the student's research, oral presentation, and writing skills through intensive study that is not possible in the context of a survey course. While the seminar is specifically designed for art history majors, qualified students from other disciplines are most welcome. Course may be taken for credit more than once.
Ms. Grad/Offered periodically

250 THE JONAS AND SUSAN CLARK COLLECTION/Seminar
This is an upper-level multidisciplinary course which examines in detail the American landscape and European genre paintings of this small collection. The course considers the historical context in which the collection was formed, with special emphasis on the Clarks' interest in paintings of women, nature, and oriental scenes. Course may be taken for credit more than once.
Ms. Grad/Offered every other year

290 SENIOR THESIS IN ART HISTORY

Required of all majors in art history and criticism.
Staff/Offered every semester

SPECIAL OFFERINGS

299.1 DIRECTED READING

Staff

299.2 DIRECTED RESEARCH

Staff

299.3 DIRECTED WRITING

Staff

299.4 FIELD PROJECT

Staff

299.5 SPECIAL PROJECT

Staff

299.6 SPECIAL TOPICS

Staff

299.8 HONORS IN ART HISTORY: SENIOR YEAR

Students planning to take honors in Art History should identify an area of interest, select an appropriate advisor, and apply to the Art History faculty before the end of the junior year. The student may, but does not have to, treat the honors thesis as a year-long project, taking 299.1 *Directed Reading* or 299.2 *Directed Research,* in the fall of the senior year and 299.8 *Honors in Art History,* in the spring semester. The program requires that a preliminary draft of the thesis be completed by the third week in March. The final version of the thesis is due one week before the last day of classes. A second reader, chosen by the student and the advisor, will participate in the final evaluation. Credit is given for course work completed, even if a student is not recommended for honors.

299.9 INTERNSHIP

Staff

STUDIO ART

PROGRAM FACULTY

Donald W. Krueger, M.F.A., *program director:* foundation studies, drawing, painting, illustration

Sarah Buie, M.F.A.: graphic design, museum design and interpretation

PART-TIME FACULTY

Joanna Bodenweber, M.F.A.: graphic design

Elli B. Crocker, M.F.A.: drawing, painting

Stephen DiRado, B.F.A.: photography
Jesseca Ferguson, M.F.A.: foundation studies
Michael Hachey, M.F.A.: foundation studies, sculpture
Lauren J. Kurki, B.F.A.: scenic, lighting, and costume design; technical theater
Ron Rosenstock, M.A.: photography
Frederick A. Simon, B.S.: video production
Patricia E. Woods, M.A.: foundation studies, printmaking

UNDERGRADUATE PROGRAM

The studio art major is designed to meet a number of student needs and interests: preprofessional preparation for graduate study and/or a career in art, design, art education, arts management, art therapy, or other arts-related fields; the satisfaction of personal interest in art and design; significant involvement in the creative process; and a meaningful focus of liberal education.

The studio art major affords a high degree of flexibility in developing a program suited to individual needs and changing interests. A strong advising program assists students in curriculum planning, identifying areas of major interest, and preparing for graduate study or a career. Areas of specialization include drawing and painting, photography, graphic design, illustration, printmaking, sculpture and three-dimensional design, and video production.

In addition to course offerings, there are also exhibitions of the work of contemporary artists, course-related exhibitions, and exhibitions of senior thesis work in the University Gallery; field trips to galleries and museums as part of several studio courses; and, in the University Center's Craft Studio, opportunities for extracurricular involvement in arts and crafts activities.

THE STUDIO ART MAJOR

The studio art major normally consists of fourteen courses: twelve studio courses and two art history courses. The studio courses, with approval of the program advisor, may include studios in music, theater, screen, cartography as well as student-initiated non-traditional experiences. In certain circumstances, and with approval of the program director, fewer studio art courses—but no less than eight—may fulfill the major.

Admission to the studio art major and to the honors program is selective, and students are expected to maintain an above-average academic record. Admission to the studio art major will occur, with department approval, only after the student has fulfilled the requirements of the University's Program in Liberal Studies (or the equivalent). Students considering majoring in studio art should complete both of the introductory "studio perspective" courses—100 and 102—before making a final decision.

HONORS IN STUDIO ART

Students with a strong interest in art and design and a commitment to intensive study, and who have completed twelve studio courses with at least a B average may, with department approval, may elect the honors sequence: two 200-level studios and a two-semester, two-credit senior thesis. Students are expected to use the honors courses and thesis to develop a body of preprofessional studio work in preparation for graduate study or a career in the arts. The thesis may be done only as a senior, and will be passed on by a faculty panel, with selected works from the thesis to be exhibited at the end of the year. Credit is given for course work completed, even if a student is not recommended for honors.

COMBINED AND DOUBLE MAJORS

Eight studio courses and two art history courses normally serve as the studio art component of a double major or a student-designed major. A combined studio art-art history major requiring a minimum of eight studio courses may be developed in consultation with the studio art and art history program advisors.

NONMAJORS

Studio art courses are open to all students, majors and non-majors alike; certain studio courses satisfy the University's *aesthetic perspective* requirement. Those students interested in studio art but majoring in other disciplines may develop a complementary four- or five-course sequence in any field of study within the program, such as graphic design or photography, among others.

COURSES

100 and 102 are "studio perspectives" designed to introduce students to the nature of visual language and the process of creative thought and action and to encourage the development of visual communication and expression skills. Although as a rule not prerequisites for other studio courses, these studio perspectives are strongly recommended for both majors and non-majors as an introduction to and preparation for additional work in studio art. The specific content of each course may vary with the instructor.

100 VISUAL STUDIES—DESIGN/Studio, Lecture, Discussion

A consideration of the process of visual perception and visual problem-solving-figure field relationships, two-dimensional pattern and form, and theory and dynamics of color. Problems in three-dimensional design may be introduced at the discretion of the instructor. Open to nonmajors.
Mr. Krueger, Mr. Hachey, Staff/Offered every year

102 VISUAL STUDIES—DRAWING/Studio, Lecture, Discussion

A consideration, primarily through drawing, of the more subjective aspects of visual language, of basic concepts of space and picture plane, and of contemporary modes of visual thinking and expression. Collage and elementary painting problems may be introduced at the discretion of the instructor. Open to nonmajors.
Mr. Krueger, Mr. Hachey, Staff/Offered every year

120 INTRODUCTION TO PHOTOGRAPHY: THE ZONE SYSTEM/Studio, Lecture, Discussion

An introduction to the art and craft of black-and-white photography emphasizing the zone system and including camera operation, developing, printing, and finishing techniques. Students must have a variable setting 35 mm camera with a built-in or hand-held exposure meter, and must provide their own film and paper. Open to nonmajors. Prerequisite: permission of instructor.
Mr. Rosenstock, Mr. DiRado/Offered every semester

121 INTERMEDIATE PHOTOGRAPHY/Studio, Lecture, Discussion

Continues the refinement of photographic seeing and darkroom techniques. Considers contemporary modes of photography and emphasizes development of personal vision. Open to nonmajors. Prerequisite: 120 or acceptable portfolio, and permission of the instructor.
Mr. Rosenstock, Mr. DiRado/Offered every year

124 INTRODUCTION TO GRAPHIC DESIGN/Studio, Lecture, Discussion
Introduces the process of solving communication problems through the synthesis of verbal and visual information. Consideration of design forms (book, poster, brochure, sign, map, exhibition) from historical and aesthetic viewpoints; introduction to selected media (typography, drawn and photographed images, color) through studio exercises and applied problems. Open to nonmajors.
Ms. Buie/Offered every year

125 GRAPHIC DESIGN PROJECTS/Studio, Lecture, Discussion
Intermediate level projects in graphic design. Open to nonmajors. Prerequisite: 124 or permission of instructor.
Ms. Buie, Ms. Bodenweber/Offered every year

128 DRAWING: STRUCTURE/Studio, Lecture, Discussion
Through various perceptual exercises and drawing techniques, the student will learn to effectively translate three-dimensional form and space onto a flat surface. The underlying structure of a form–as well as the underlying structure of drawing–are examined at length. Open to nonmajors. Prerequisite: instructor permission.
Ms. Crocker/Offered every year

129 DRAWING: FIGURE/Studio, Lecture, Discussion
This course focuses on the human figure through various drawing methods, with analysis of the structure and anatomy of the body as well as exploration of the expressive potential of the human figure. Prerequisites:100 or102 or 128 or instructor permission.
Ms. Crocker/Offered every year

132 BEGINNING PAINTING/Studio, Lecture, Discussion
The course introduces the fundamentals of craft and explore the synthetic possibilities of this medium, while also providing opportunity for self-expression. Focus is on the issue of *material*–both the materials employed by the painter, and the materials the painter wishes to simulate. Prerequisites:100 or 102 or 128 or instructor permission.
Ms. Crocker/Offered every year

133 PAINTING/Studio, Lecture, Discussion
A continuation of the study of painting with increasing emphasis on individual development and direction. Prerequisite: 132 or instructor permission. Open to nonmajors.
Ms. Crocker/Offered every other year

136 INTRODUCTION TO SCULPTURE/Studio, Lecture, Discussion
An introduction to modes of three-dimensional creation through a variety of traditional and contemporary materials and concepts. Alternating emphasis on sculptural objects, the human figure, and issues of architectural and environmental expression. Open to nonmajors. Prerequisite: instructor permission.
Mr. Hachey/Offered every year

137 SCULPTURE PROJECTS/Studio, Lecture, Discussion
An intermediate-level course leading to the development of personal direction and expression in three-dimensional form. Open to nonmajors. Prerequisite: permission of instructor.
Mr. Hachey/Offered periodically

158 PRINTMAKING—INTAGLIO/Studio, Lecture, Discussion
Introduction to the techniques and aesthetic of intaglio printing—primarily hard and soft ground etching methods, embossment and aquatint—on metal plates. At the discretion of the instructor, the course may include methods of engraving, drypoint, and collagraph. Open to nonmajors. Prerequisite: instructor permission.
Ms. Woods/Offered every year

162 PRINTMAKING—MONOTYPE AND RELIEF/Studio, Lecture, Discussion
The study of techniques of monotype printing as an integration of drawing, painting, and printmaking, and the investigation of black and white and color lino and woodcut relief printing. Open to nonmajors. Prerequisite: instructor permission.
Ms. Woods/Offered every year

167 INTRODUCTION TO VIDEO PRODUCTION/Studio, Lecture, Discussion
An introductory workshop in seeing and thinking in electronic imaging techniques and processes. Open to nonmajors.
Mr. Simon/Offered every semester

171 VIDEO PRODUCTION PROJECTS/Studio, Lecture, Discussion
Intermediate individual and/or group work in video. Open to nonmajors. Prerequisite: 167 or appropriate video production course(s) and permission of instructor.
Mr. Simon/Offered every year

174 CONTEMPORARY DIRECTIONS/Studio, Lecture, Discussion
Intermediate level course. Experiential examination of current movements, directions, styles, and attitudes in art. Open to nonmajors. Prerequisite: appropriate introductory course(s) and/or permission of instructor.
Ms. Ferguson, Staff/Offered periodically

182 TECHNICAL THEATER
Refer to course description under Theater Arts 120.
Ms. Kurki/Offered every year

184 DESIGN FOR PERFORMANCE
Refer to course description under Theater Arts 123.
Ms. Kurki/Offered every year

200 PHOTOGRAPHY PROJECTS/Studio, Lecture, Discussion
Continues the study of the techniques and aesthetics of black and white photography. Students have the opportunity to pursue individual photographic projects in the size and format of their choice. Open to nonmajors. Prerequisite: 120 and/or 121 and permission of instructor.
Mr. Rosenstock, Mr. DiRado, Staff/Offered every year

208 TYPOGRAPHY/Studio, Lecture, Discussion
Study of typographic art through studio exercise and applied problems that deal with the organizational and expressive natures of type. Prerequisite: 124 and 125 or permission of instructor.
Ms. Buie/Offered every year

234 STUDIO TOPICS/Studio, Lecture, Discussion
An advanced course. Students from all studio disciplines develop individual work in response to thematic issues presented through readings, research, and discussions. Required as the first semester of the senior thesis. Prerequisite: instructor permission.
Mr. Krueger/Offered every year

250 PHOTOGRAPHY STUDIO/Studio, Discussion
Advanced, professionally-oriented, individual photographic study. May be taken for credit more than once. Prerequisite: appropriate intermediate and advanced photography courses and permission of instructor.
Staff/Offered every year

254 GRAPHIC DESIGN STUDIO/Studio, Lecture, Discussion
Advanced, professionally-oriented problems in graphic design. May be taken for credit more than once. Prerequisite: appropriate intermediate and advanced graphic design courses and permission of the instructor.
Ms. Buie/Offered every year

256 SEMINAR IN CARTOGRAPHIC DESIGN
See listing under Geography 274.
Mr. Steward/Offered every year

258 DRAWING AND PAINTING STUDIO/Studio, Discussion
Advanced, professionally-oriented, individual drawing and painting study. This course offers the advanced studio art student an opportunity to further refine technical ability in a chosen medium, facilitate critical thinking, and consider the role of meaning in art-making. Independent work will be stressed. May be taken for credit more than once. Prerequisite: appropriate intermediate/advanced drawing and painting courses and permission of instructor.
Ms. Crocker/Offered every other year

262 ILLUSTRATION STUDIO/Studio, Discussion
Advanced, professionally-oriented projects in contemporary editorial, book, magazine, and advertising illustration. May be taken for credit more than once. Prerequisite: appropriate intermediate and advanced drawing and painting (and/or photography) courses and permission of instructor.
Mr. Krueger/Offered every other year

266 SCULPTURE STUDIO/Studio, Discussion
Advanced, professionally-oriented, individual study of sculpture, and spatial and three-dimensional design. May be taken for credit more than once. Prerequisite: appropriate sculpture experience and permission of instructor.
Mr. Hachey/Offered every year

270 PRINTMAKING STUDIO/Studio, Discussion
Advanced, professionally-oriented, individual study in printmaking. May be taken for credit more than once. Prerequisite: appropriate printmaking experience and permission of instructor.
Ms. Woods/Offered every year

278 VIDEO PRODUCTION STUDIO/Studio, Discussion
Advanced projects in video production. May be taken for credit more than once. Prerequisite: appropriate intermediate level video production courses and permission of instructor.
Mr. Simon/Offered every year

280 SENIOR STUDIO/Studio, Discussion
Advanced, preprofessional, independent work under faculty supervision, in one of the studio media. May be taken for credit more than once. Prerequisite: appropriate advanced courses and permission of program director.
Staff/Offered every year

289 SENIOR THESIS
Required of honors students; optional for other studio art majors. The development of a body of preprofessional work to be presented to the faculty with oral and written thesis support. Prerequisite: instructor permission.
Mr. Krueger/Offered every year

SPECIAL OFFERINGS

299.4 FIELD PROJECT
Staff

299.5 SPECIAL PROJECT
Staff

299.6 INTERNSHIP
Staff

Music

PROGRAM FACULTY

Gerald R. Castonguay, Ph. D.: *program director:* musicology
Brian Belet, D.M.A.: theory, composition, electronic and computer music
Linda J. Dusman, D.M.A.: theory, composition, electronic and computer music

PART-TIME FACULTY

Barbara Barry, Ph.D.: music history
Robert Chadwick, M.Mus.: bassoon
Peter Clemente: M.Mus: classical guitar
Louisa Striker Damiano, B.Mus.: french horn
Jean De Mart, M.Mus.: flute
Richard Falco, B.A.: jazz studies and jazz guitar
Mary Ferrante, B.A.: voice
Catherine Fuller, M.Mus.: piano

David Hodgkins, M.Mus.: conducting
Bruce Hopkins, M.Mus.: trumpet
William Malone, M.Mus.: clarinet and saxophone
J. Scott Mousseau, M.Mus.: trombone and low brass
Richard A. Odgren, B.Mus.: jazz piano
Caroline Worthington, B.Mus.: cello
Staff: violin and viola

ADJUNCT FACULTY

Hartmut Kaiser, Ph.D.: German romanticism, music, literature, and aesthetics

EMERITUS

Wesley M. Fuller, M. Mus.: theory, composition, electronic and computer music

UNDERGRADUATE PROGRAM

The music program offers a major and a formal concentration, as well as courses and activities for the nonmajor. Courses are designed to teach students to listen to music intelligently, to develop musical perception, to master basic skills of music and apply them creatively, and to acquaint students with representative works from various periods of music history. The study of music can open new perspectives on many aspects of culture and society and the program stresses the advantages of combining professional musical development with the humanistic breadth offered by a strong liberal education.

Courses are open to majors and nonmajors, and assignments are designed to suit the different goals and backgrounds of the students in each category.

THE MUSIC MAJOR

Fourteen courses are required for the music major:

Requirements:

1. Theory: 121, 122, 123,124
2. Music History: 101, 102, 103
3. Private Study: 180 (Two semesters of private instruction taken after completion of Music 121
4. Performing Groups: a minimum of four semesters in 170,171,172,173, or 174
5. Two seminars at the 200 level, one in history and one in theory/composition
6. Two music electives (selected from electronic music, World Music, history, and theory seminars, or two additional semesters of 180. Students may also fulfill this requirement through tutorials, directed readings, or special projects)
7. Related areas: one course in art history, studio art, theater arts, or screen studies
8. A minimum skills test, including sight-singing and dictation at a level of proficiency necessary for successfully pursuing the major, must be passed during the sophomore year. A keyboard proficiency test must be passed during the first semester of the junior year.

The four semesters (two required, two optional) of private lesson fees for the major are covered by regular tuition payment.

HONORS

Admission to the *Honors Program* is by approval of the music faculty. Students may elect to pursue one of four different honors tracks: history, theory, composition, or performance. Application to the Honors Program in history, theory, or composition is done at the beginning of the junior year. Application to the *Honors Program* in performance **must** be done at the beginning of the first year.

Prospective majors who wish to pursue honors in performance must request an audition and assessment of their potential regarding the honors performance track at the beginning of their first year at Clark. Formal admission into the honors performance track requires a second audition at the start of the sophomore year.

HONORS IN HISTORY, THEORY, OR COMPOSITION REQUIREMENTS

The fourteen courses required for the music major, plus a project (a total of fifteen courses) are required for the *Honors Program* in hstory, theory, or composition. The honors student will replace the two music electives of the music major (item six of the requirements) with study in a special area through either seminars or directed studies. These two special electives lead into the capstone project for the *Honors Program* (Music 299.8), where the student will develop a thesis in history or theory, or an extended composition.

HONORS IN PERFORMANCE REQUIREMENTS

The fourteen courses required for the music major, plus two additional semesters of private study, and a senior capstone project culminating in a recital (a total of seventeen courses) are required for the *Honors Program* in performance. The honors student will replace the two music electives of the music major (item six of the requirements) with two semesters of private lessons for credit (Music 180). Two additional semesters of Music 180 (for a total of six semesters of private study) culminate in a full recital and a companion capstone project (Music 299.8) dealing with the stylistic analysis of the music to be performed in the recital. At least four appearances in student recitals, including a half-recital during the junior year, precede the senior recital. The lesson fee in the honors performance track is covered by regular tuition payment during the sophomore through senior years. It is strongly urged that Music 121 be successfully completed by the end of the first year.

NONMAJORS

All of the courses, seminars, and activities in the music program – with the exception of senior tutorials (230, 240, 250, 260) – are open to qualified nonmajors. Students who have a strong interest in music but whose major lies in another discipline can declare a concentration in music. The music concentration centers on a core of studies in one of five specific areas.

Requirements for a Concentration in Music:

1. Music 010, *Introduction to Music*
2. Music 110, *Rudiments of Music* (or equivalent)
3. Three additional courses in one of five specific areas of music:
    a. Concentration in Performance
    Three semesters of Music 180. (For information on tuition coverage, see description of Music 180). Students who wish to specialize in performance should arrange for an audition by contacting the program director. The audition will determine acceptance into the concentration.
    b. Concentration in Computer Music
    Music 140, *Computer Music I*
    Music 141, *Computer Music II*

Music 270, *Directed Studies in Computer Music*

c. Concentration in Jazz Studies
  Music 150, *Jazz Theory*
  Music 151, *Jazz History*
  Music 250, *Tutorial in Jazz Composition*

d. Concentration in Music History
  any three of the following music history courses and/or 200-level music history seminars:
  Music 101, *Medieval, Renaissance, Baroque*
  Music 102, *Classical and Romantic Periods*
  Music 103, *Twentieth Century*
  Music 201, *J.S. Bach and His Music*
  Music 202, *Beethoven: The Man and His Music*
  Music 203, *Amadeus: The Life and Music of Mozart*
  Music 204, *French Impressionism*
  Music 210, *History Seminar-Richard Wagner's Music*

e. Concentration in Music Theory
  Music 121, *Theory I: 18th-Century Practice,* and any two of the following:
  Music 122, *Theory II: 19th-Century Practice*
  Music 123, *Theory III: 20th-Century Practice*
  Music 124, *Theory IV: Counterpoint*

PERFORMING ORGANIZATIONS

Nonmajors and majors may audition for a variety of organizations, which rehearse regularly and perform several yearly concerts. These groups include the Clark Concert Choir and chamber chorus, Instrumental Chamber Ensembles, and the Jazz Workshop Ensembles.

PRIVATE LESSONS

Private lessons for nonmajors and majors are offered with or without course credit in several areas. See course descriptions of Music 180, *Private Instruction for Instruments and Voice* (for credit) and Music 018, *Private Instruction for Instruments and Voice* (non-credit).

PREPROFESSIONAL PROGRAMS

Students interested in such professions as music therapy, concert management, ethnomusicology, or music education can combine music courses with appropriate courses from other disciplines to create an individually-designed major. The requirements for such preprofessional programs are jointly determined by the student and an advisory committee made up of one music faculty member (who serves as chair) and two faculty members from other disciplines.

Although the music program does not offer specific courses in music education, music majors interested in music education may take courses in the music curriculum, in conjunction with teaching courses through the Education Department. For more information about this option, please contact the Education Department.

INTRODUCTORY COURSES

010 INTRODUCTION TO MUSIC/Lecture, Discussion

Designed for the nonmajor, the goal of the course is to expand the concept of the musical experience and to develop discriminating listeners. Taught jointly by several faculty members, it also provides an introduction to the music program. The course

includes an introduction to principles of rhythm, pitch, timbre (and their notations); the principles of structure; the aesthetics of music; specific forms including fugue, sonata form, variations; and selected historical styles.
Staff/Offered every semester

011 WORLD MUSIC/Lecture, Seminar

Students study and listen to the similarities and differences in music from a wide variety of cultures and consider the way in which music, ranging from classical art music to music for work and communal celebration, functions within cultures. Musics of India, Africa, Japan, China, and Iran are some of the recurring areas. Guest performers of ethnic music are part of the course.
Staff/Offered every other year

110 RUDIMENTS OF MUSIC/Lecture, Tutorial, Lab

This beginning course in the fundamentals of music requires no previous musical training. Students learn to understand, hear, recreate, and write the basic elements of the pitch and rhythmic notation system, including scales, keys, and elementary melodic and harmonic organization. Skill training begun in this course enables the student to pursue more successfully private instrumental or vocal instruction, and to begin work in composing and arranging.
Ms. Dusman, Mr. Belet /Offered every semester

MUSIC HISTORY

101 MEDIEVAL, RENAISSANCE, BAROQUE/Lecture, Discussion

Intended for both the general student and the music major, this survey begins with the early Christian chant and includes a study of the medieval song and motet with special emphasis on the music of Guillaume de Machaut. The study of Renaissance music revolves around the works of Josquin des Prez and culminates with the music of Palestrina and Lassus. The survey of Baroque genres (opera, oratorio, cantata, sonata, concerto, and dance suite) focuses on the music of Monteverdi, Purcell, Corelli, Couperin, Rameau, Vivaldi, Bach, and Handel. Evaluation is based on listening exams, quizzes, and papers. When possible, works are performed in class.
Mr. Castonguay/Offered every year

102 CLASSICAL AND ROMANTIC PERIODS/Lecture, Discussion

Intended for both the general student and the music major, this survey begins with the music of eighteenth-century Vienna and focuses on the music of Haydn and Mozart and the shift in musical style of Beethoven's works leading to the major figures of nineteenth century Romanticism. The genres of symphony, chamber music, opera, and song are studied through the works of Schubert, Berlioz, Schumann, Mendelssohn, Chopin, Brahms, Tchaikovsky, Wolf, Mahler, Bruckner, Verdi, Wagner, Elgar, Franck, Fauré, and Richard Strauss. Evaluation is based on listening exams, quizzes, and papers. When possible, works are performed in class.
Mr. Castonguay/Offered every year

103 TWENTIETH CENTURY/Lecture, Discussion

This history of twentieth-century music explores an abandonment of functional tonality after 1900 and its replacement with new musical systems, and the remarkable rejections and explorations which characterize the musical world after 1945. The first half of the century will be covered by studying important composers within a chronological framework; the second half will be studied in terms of compositional

trends. Study of the varied styles and the spirit of experimentation that is particularly characteristic of the second half of the century is enlivened through in-class performances and projects that provide hands-on experience with this music.
Ms. Dusman, Mr. Belet/Offered every year

201 J.S. BACH AND HIS MUSIC/Lecture, Seminar
This course investigates the social, historic, and cultural setting of Bach's era and encompasses study of his music, including his early cantatas and organ works, the instrumental music from his Cöthen period, and finally, the mature cantatas of his Leipzig years. When possible, works are performed in class and scores are provided for the majority of works studied.
Mr. Castonguay/Offered periodically

202 BEETHOVEN: THE MAN AND HIS MUSIC/Lecture, Seminar
This course explores the social and historical background of Beethoven's Vienna and centers on the study of selected works from the important genres (symphony, chamber music and sonata) throughout Beethoven's career.
Mr. Castonguay/Offered periodically

203 AMADEUS: THE LIFE AND MUSIC OF MOZART/Lecture, Seminar
This course explores the music and life of Mozart from his early years as a child prodigy to his mature years as an outstanding genius and struggling artist in Vienna. Studies include selected masterworks from his symphonies, piano concertos, operas, piano sonatas, and chamber music.
Mr. Castonguay/Offered periodically

204 FRENCH IMPRESSIONISM/Lecture, Seminar
Dealing primarily with the music and cultural life of Paris from 1870 to 1925, this course encompasses a wide range of styles which include the mature and late works of César Franck and Gabriel Fauré, the major works of Claude Debussy, Erik Satie, and Maurice Ravel, and the early works of Igor Stravinsky. The course focuses on the analysis of selected works and also explores the rich cultural and social setting of Paris during this period.
Mr. Castonguay/Offered periodically

210 HISTORY SEMINAR — RICHARD WAGNER'S MUSIC DRAMAS: MYTH AND INNOVATION/Lecture, Seminar
For the advanced music student, this course focuses on six works: the four-opera, *The Ring of the Nibelung;* an earlier opera, *Lohengrin;* and a later opera, *Tristan and Isolde.* Equal emphasis is placed on an examination of Wagner's mythological and literary sources; the musical innovations; and the psychological, philosophical, and sociological implications of these works. The course also investigates Wagner's theater reform and his impact on writers and composers up to the present.
Mr. Kaiser, Mr. Belet/Offered periodically

230 SENIOR TUTORIAL IN MUSIC HISTORY
In this tutorial, the student will develop work (paper, composition, performance, etc.) in consultation with the Instructor. For majors only. Full course. Prerequisite: permission of instructor.
Staff/Offered every semester

With permission of the program director the following courses offered by other departments may be taken for music history, criticism, and theory credit.

German 197 THE FAUST THEME IN LITERATURE AND MUSIC/Seminar
See listing under Foreign Languages and Literatures, German 197.
Mr. Kaiser/Offered every other year

MUSIC THEORY COURSES

121 THEORY I: 18TH-CENTURY PRACTICE/Lecture, Tutorial, Lab

Explores the system of tonal music commonly employed by composers of the eighteenth- and early nineteenth-centuries, as well as by composers of popular music today. This study, incorporating exercises, composition, analysis, and performance, also examines the way students listen to music in general, thus leading to a deeper understanding of the musical process.
Ms. Dusman, Mr. Belet/Offered every year

122 THEORY II: 19TH-CENTURY PRACTICE/Lecture, Tutorial, Lab

Deals with problems in analysis, composition, and orchestration in the chromatic style of the nineteenth century. Works of Beethoven, Chopin, Schumann, Wagner, and Brahms are analyzed and used as compositional models. The harmonic language of impressionism, with its emphasis on scalar control, also is examined. Prerequisite: Music 121.
Ms. Dusman, Mr. Belet/Offered every year

123 THEORY III: 20TH-CENTURY PRACTICE/Lecture, Tutorial

Compositional techniques of major twentieth-century composers are analyzed and used as a basis for compositional assignments. Prerequisite: Music 122 or permission of instructor.
Ms. Dusman, Mr. Belet/Offered every year

124 THEORY IV: COUNTERPOINT/Lecture, Tutorial

For the advanced music student, the styles and procedures used by composers throughout the long development of Western art music are studied as the principal models for independent creative work. While emphasizing counterpoint as a procedure, students are expected to have a good background knowledge of music theory and history. Music 121, 122, and 123 are prerequisites; and previous or concurrent registration in the music history sequence is strongly advised.
Ms. Dusman, Mr. Belet/Offered every year

140 COMPUTER MUSIC I/Studio, Lecture, Discussion

This course explores computer music as a natural, historical, and artistic result of twentieth-century musical and technological achievements. Students study basic theory of how a computer generates sound along with the principal synthesis techniques used in computer music, as well as learn to use a particular computer music program and produce taped examples of assignments. In addition, a group of important musical works is studied.
Ms. Dusman, Mr. Belet/Offered every year

141 COMPUTER MUSIC II/Studio, Lecture, Discussion

A continuation of 140. Small group tutorials are given in the studios, and each student

has independent studio time for the development of individual projects throughout the course. Prerequisite: 140.
Ms. Dusman, Mr. Belet/Offered every year

150 JAZZ THEORY/Lecture, Tutorial
Includes a study of the rhythmic/harmonic/melodic structures of jazz, the scalar basis of improvisation, and voicing practice as it pertains to scoring for small and large ensembles. Prerequisite: Music 110 or passing of placement examination in rudiments.
Staff/Offered periodically

151 JAZZ HISTORY/Lecture, Tutorial
Centers on a study of the evolution of jazz style from its nineteenth-century beginnings to the present, including: African roots, minstrels, ragtime, Dixieland, swing, bop, progressive, cool, free-form, and third-stream. A research paper and a final exam are required. Half course.
Staff/Offered periodically

220 THEORY/COMPOSITION SEMINAR
Rotating topics that include but are not limited to the following – John Cage: Composer as Revolutionary; Arnold Schönberg: The Reluctant Revolutionary; Sound Invention Workshop: The Search for Relevancy; Experiments in Tuning and Formal Design; Computer-Assisted Composition; Form and Analysis; Conducting; Composition. Prerequisites: Music 121, 122, 123, 124.
Ms. Dusman, Mr. Belet/Offered every year

240 SENIOR TUTORIAL IN COMPOSITION
In this tutorial the student develops work (a paper, composition or performance) in consultation with the instructor. For majors only. Full course. Prerequisite: permission of instructor.
Staff/Offered every semester

250 TUTORIAL IN JAZZ COMPOSITION
The student writes original scores for performance by a workshop ensemble. Prerequisite: Music 151 and permission of instructor.
Staff/Offered periodically

260 SENIOR TUTORIAL IN THEORY
In this tutorial the student develops work (a paper, compositon, or performance) in consultation with the instructor. For majors only. Full course. Prerequisite: permission of instructor.
Staff/Offered every semester

270 DIRECTED STUDIES IN COMPUTER MUSIC/Studio, Lecture, Discussion
Advanced work in any of the main areas of computer music: composition, hardware or software design, and psychoacoustics. Resources of the Tri-College Electronic Music Program are made available to students. Prerequisite: Music 140, 141
Ms. Dusman, Mr. Belet/Offered periodically

PERFORMANCE COURSES

180 PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE

Areas offered include: piano, jazz piano, voice, clarinet and saxophone, flute, classical guitar, jazz guitar, violin and viola, french horn, trumpet, bassoon, trombone and low brass, cello, and conducting. Lessons are taken for course credit. In areas not currently offered at Clark, the Music Program will find a qualified instructor. Award of credit in the off-campus study requires special permission from the Music Program director. No credit is awarded for off-campus study in those areas currently available at Clark. Prerequisites: for the concentrator, Music 010 and either Music 110 or Music 121; for the major, Music 101 and 121 (co-registration is permissible for the major). Students are admitted to Music 180 lessons on a competitive basis, which includes an audition and successful completion of the prerequisite courses. Approved concentrators receive three semesters of lessons covered by tuition, majors receive two semesters of lessons with options available for one or two additional semesters covered by tuition), and majors in Honors Performance track receive six semesters of lessons covered by tuition. Specific details are available in the Music Program office.
Staff/Offered every semester

018 PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE

Lessons are taken for noncredit. Areas offered: same as Music 180 above. Lessons taken for noncredit require no prerequisite and are recommended for beginners. (The fee is not covered by tuition).
Staff/Offered every semester

160 CHORAL MUSIC AND CONDUCTING/Lecture, Tutorial

Styles of choral music from different periods are studied with the aid of scores and recordings. Students learn basic choral conducting techniques. Prerequisite: Music 121 or permission of instructor.
Staff/Offered periodically

SPECIAL OFFERINGS

299.1 DIRECTED READING

Staff

299.2 DIRECTED RESEARCH

Staff

299.3 DIRECTED WRITING

Staff

299.4 FIELD PROJECT

Staff

299.5 SPECIAL PROJECT

Staff

299.6 SPECIAL TOPICS

Staff

299.8 HONORS: CAPSTONE PROJECT
Staff

299.9 INTERNSHIP
Staff

The following musical activities are open to all undergraduate and graduate students. Auditions are held during the first week of the fall semester. Although no credit is awarded, the transcript of any undergraduate who completes the assigned performance requirements will include a listing of the particular activity for which he or she was registered.

170 CLARK CONCERT CHOIR/Rehearsal, Performance
A chorus of 40 to 50 voices, the choir presents two major concerts each year on the Clark campus as well as in off-campus appearances.
Mr. Hodgkins/Offered every semester

171 CLARK CHAMBER CHORUS/Rehearsal, Performance
This is a small, specialized singing group, chosen from the larger Clark Concert Choir by the conductor. Admission is by audition.
Mr. Hodgkins/Offered every semester

173 CHAMBER MUSIC ENSEMBLES/Rehearsal, Performance
The number of small ensembles is determined by the performing talent in a given year. Admission is by audition.
Staff/Offered every semester

174 JAZZ WORKSHOP/Rehearsal, Performance
Includes ensemble performance practice with weekly rehearsals throughout the year. An audition is required. Credit is possible for those students who are concurrently enrolled in or have previously passed Music 151. Maximum transcript credit allowed is one full course; normally offered as a half course.
Staff/Offered every semester

Screen Studies

PROGRAM FACULTY

Marvin D'Lugo, Ph.D., *program director:* Spanish and Latin American cinema

Dana Benelli, Ph.D.: American cinema, documentary cinema, film theory and criticism

Marcia Butzel, Ph.D.: French cinema, Italian cinema, screen theory and criticism

Walter Schatzberg, Ph.D.: German cinema

Michael K. Spingler, Ph.D.: French cinema

ADJUNCT FACULTY

Paul Wilkes, M.S.: documentary film

UNDERGRADUATE PROGRAM

The Screen Studies Program deals with arts and artifacts of the moving two-dimensional image, usually combined with sound; it is concerned, in other words, with the study of film, broadcast television, and other forms of video. The program stresses the importance of a liberal arts background, for the screen arts touch upon and are affected by all sectors of contemporary culture and society. Classes provide a core of basic and advanced knowledge of the screen arts and media, while encouraging students to explore diverse connections and influences, ranging from the visual arts, drama, literature, and aesthetics to sociology, psychology, history, and economics.

Nonmajors take screen studies courses for many different reasons: to acquire knowledge that relates to their interests in other disciplines, to gain a better understanding of the roles film and television play in their everyday lives, or to understand the importance of the screen media as cultural and artistic forms.

Those considering careers in the screen arts or related areas usually major in screen studies. In addition to being of special benefit for those planning graduate study or a career in the communications fields, the major also may be of interest to those seeking a liberal arts education that speaks directly to questions of contemporary life, culture, and the arts.

Students interested in film and video production may take the Studio Art Program's production courses and/or gain production experience through professional internships.

THE SCREEN STUDIES MAJOR

The Screen Studies major consists of at least fifteen courses–a minimum of ten courses in screen (see item one of the screen studies requirements), and at least five courses in a related area, with three of those five courses at the advanced level (see item two of the screen studies requirements).

Requirements:

1. A minimum of ten courses in screen, including:
   a. 101, *Introduction to Screen Studies* (to be taken as early as possible).
   b. At least three screen history courses, including a minimum of two of the following: 120, *History of American Narrative Film;* 121, *Survey of International Film Movements;* 122, *History of Broadcasting and Television.*
   c. At least one screen theory course (usually 231, *Film Theory* or 232, *Television Theory and Criticism*).
   d. One course in a national cinema chosen from the following: 146, *Introduction to Cinema of Spain;* 148, *Introduction to the Cinema of Latin America;* 150, *New German Cinema;* 152, *Japanese Cinema;* 155, *Studies in Italian Cinema;* 163, *History of French Cinema Before World War II.*
   e. An advanced topics course resulting in a major term paper. (Usually 290, *Advanced Problems in Screen Studies,* or 299.5, *Special Project,* when the latter results in original research or intensive critical analysis or intensive theoretical reading and analysis).
   f. One practicum course, normally Studio Art 167, *Introduction to Video Production,* or its equivalent. No more than two practicum courses may

count toward the minimum of ten screen courses required for the major. (If students do take additional practicum courses, they will count toward graduation, but not toward the major).

2. Demonstrated competence in an outside area pertinent to the student's particular emphasis in screen studies. The student demonstrates competence in an outside area by accomplishing one of the following:
   a. Completing requirements for a double major or,
   b. Completing five courses that together form a mutually coherent group—disciplinary or interdisciplinary—related to screen studies. At least three of the courses should be at the advanced level. Courses forming the outside area will be chosen on the basis of consultation with and approval by the major advisor.

COURSES

Note: The courses listed below are designated as lecture, discussion, or seminar. However, all screen studies courses include viewing of films and/or television programming. Students are usually required to attend separate screening periods in addition to lecture, discussion, or seminar sessions.

101 INTRODUCTION TO SCREEN STUDIES/Lecture, Discussion

Introduction to screen arts, with emphasis on critical thought and analysis. Special attention is paid to styles and forms used to organize image and sounds in individual works, and to critical analysis and theoretical argumentation. Fulfills prerequisites for advanced screen studies courses.
Mr. Benelli/Offered every semester

120 HISTORY OF AMERICAN NARRATIVE FILM/Lecture, Discussion

Intensive overview of the national cinema, which has been strongest socially and economically, and which is also often regarded as the most influential in an aesthetic sense. Consideration of "Hollywood" film-making from social, economic, and aesthetic viewpoints.
Mr. Benelli/Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS/Lecture, Discussion

Broad survey designed to acquaint students with major foreign movements in cinema history. Includes readings on and screenings of examples selected from Italian silent epics, early Scandinavian cinema, German Expressionist and Weimar cinema, Soviet montage school, Soviet socialist realism, British documentary school, Nazi cinema, Italian neo-realism, Japanese classical cinema, French New Wave, post-New Wave political cinema, Third World cinema, New German Cinema, and various Eastern European schools.
Mr. Benelli, Ms. Butzel/Offered every other year

122 HISTORY OF BROADCASTING AND TELEVISION/Lecture, Discussion

Overview of the history of the broadcast media, from the invention of radio through the development of the television networks and cable transmission. Attention is paid to the aesthetics of the medium, typical programming characteristics, social implications of broadcast materials, and the economic-industrial infrastructure of broadcasting.
Mr. Benelli/Offered every other year

123 FACTUAL FILM AND TELEVISION/Lecture, Discussion
This course opens with a description of the formal elements and textual processes by which documentary films construct their representations of reality. Then, a series of case study analyses of a variety of texts serves as the basis for exploring documentary formats (TV news, documentary reenactments, cinema vérité, propaganda), and situations in which Hollywood and current television programming have appropriated documentary as a facet of their commercial activities (e.g., in TV movies, semi-documentary films, "infotainment," etc.) Course screenings are drawn from both classic and contemporary documentaries.
Mr. Benelli/Offered every other year

146 INTRODUCTION TO CINEMA IN SPAIN/Lecture, Discussion
Refer to course description under Spanish 146.
Mr. D'Lugo/Offered every other year

147 STUDIES IN SPANISH CINEMA/Lecture, Discussion
Refer to course description under Spanish 147.
Mr. D'Lugo/Offered every other year

148 INTRODUCTION TO CINEMA IN LATIN AMERICA/Lecture, Discussion
Refer to course description under Spanish 148.
Mr. D'Lugo/Offered every other year

149 STUDIES IN LATIN AMERICAN CINEMA/Lecture, Discussion
Refer to course description under Spanish 149.
Mr. D'Lugo/Offered every other year

150 NEW GERMAN CINEMA/Lecture, Discussion
Refer to course description under German 150.
Mr. Schatzberg/Offered every other year

152 JAPANESE CINEMA/Lecture, Discussion
How different was, or is, the Japanese cinema from the classical Hollywood cinema that has dominated the world's commercial filmmaking as a model to be either imitated or resisted? This course addresses the issue of difference "from the outside" by engaging in four activities: study of the history of the Japanese film industry; identification of the characteristic storytelling formats of Japanese cinema; formal analysis of the stylistic signatures of its master directors (Ozu, Mizoguchi, Kurosawa, Oshima); and, study of Western criticism's discourse on this national cinema, which one critic has called "our dream cinema."
Mr. Benelli/Offered every other year.

155 STUDIES IN ITALIAN FILM: NEOREALISM/Lecture, Discussion
Refer to course description under Comparative Literature 155.
Ms. Butzel/Offered every other year

160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR/Lecture, Discussion
Refer to course description under French 160.
Mr. Spingler/Offered every other year

163 HISTORY OF FRENCH CINEMA BEFORE WORLD WAR II/Lecture, Discussion

Refer to course description under French 163.
Ms. Butzel/Offered every other year

184 FILM AS NARRATION/Lecture, Discussion

Explores in depth a central approach to the study of film and gives students intensive training in film analysis. Students become familiar with trends in narrative theory, in order to analyze a range of narratives from world cinema. Specific concepts and topics to be considered include point of view, story structure, semiotic codes, the impression of reality, voice, and spectator positioning. Relationships between film and other art forms also are considered. Prerequisite: Screen Studies 101 or instructor permission.
Ms. Butzel/Offered every other year

188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM AND THE ARTS/Lecture, Discussion

Refer to course description under German 188.
Mr. Schatzberg/Offered every other year

191 STUDIES IN COMPARATIVE CULTURE: FRENCH VS. AMERICAN TELEVISION/Lecture, Discussion

Refer to course description under Comparative Literatures 191.
Ms. Butzel/Offered every other year.

195 DOCUMENTARY FILM/Lecture, Discussion

Refer to course description under English 195.
Mr. Wilkes/Offered every year

231 FILM THEORY/Lecture, Seminar

Examines major works of film theory, both classical and contemporary. Readings are drawn from the work of Eisenstein, Bazin, Munsterburg, Arnheim, Burch, Benjamin, Adorno, Kracauer, Metz, Baudry, Heath, Mulvey, Wollen, Bordwell, and others. Prerequisite: Screen Studies 101 or permission of instructor.
Mr. Benelli/Offered every year

290 ADVANCED PROBLEMS IN SCREEN STUDIES/Seminar

Advanced studies of specific issues and approaches in the study of the screen arts. Topics vary each time the course is offered. Sample topics: Brechtian cinema; inventing the feature film; Eisenstein as theoretician, filmmaker, and historical figure; the idea of a national cinema; and non-Western filmmaking. Students produce a major term paper. Prerequisite: Screen Studies 101 or permission of instructor.
Staff/Offered every other year

299 GENDER AND FILM

This course examines the ways that gender is produced by the social technologies of film and broadcast video. We consider how concepts of sexual difference (femininity and masculinity) organize representation, narrative, and spectatorship in Hollywood and alternative cinemas, and in some television and video. The course also includes study of the history of women's cinema. Course readings are primarily critical and theoretical, featuring the contributions of feminist film scholars and critics. *Prerequi-*

site: Screen 101, or equivalent, with permission of instructor.
Ms. Butzel/Offered every other year

305 FEMINIST FILM THEORY AND CRITICISM

This seminar explores the emergence of feminist film criticism from the women's movement of the 1970s and its subsequent elaboration via such theoretical frameworks as semiotics, psychoanalysis, marxism, and post-structural approaches to culture. Emphasis is placed on understanding the role of critical theory in feminist analysis of contemporary culture, particularly film and television texts. Reading includes work by Freud, Foucault, Lacan, Metz, Mulvey, de Lauretis, and Doane. Seminar participants analyze a range of film, video, and television texts in weekly screenings and discussions. This seminar is open to graduate students and advanced undergraduates with permission of instructor.
Ms. Butzel/Offered every other year

SPECIAL OFFERINGS

299.1 DIRECTED READING

Staff

299.2 DIRECTED RESEARCH

Staff

299.3 DIRECTED WRITING

Staff

299.4 FIELD PROJECT

Staff

299.5 SPECIAL PROJECT

Staff

299.6 SPECIAL TOPICS

Staff

299.9 INTERNSHIP

Staff

Theater Arts

PROGRAM FACULTY

Neil R. Schroeder, Ph.D., *program director:* theater history and literature, modern drama, Ibsen, speech

Raymond J. Munro, M.A.H.: directing, acting theory, independent narrative video

PART-TIME FACULTY

Jacquelyn Bessell, M.A.: theater history and literature
Jeffrey Brooks, M.F.A.: dramatic writing
Gino DiIorio, M.F.A.: acting
Lauren J. Kurki, B.F.A.: scenic, lighting, and costume design; technical theater
Catherine Quick Spingler, M.A.: costume design
Karin Trachtenberg, M.A.: movement and choreography, expressive therapies

ADJUNCT FACULTY

Kenneth Hughes, Ph.D.
Hartmut Kaiser, Ph.D.
Michael K. Spingler, Ph.D.
Stanley Sultan, Ph.D.
Virginia Vaughan, Ph.D.

UNDERGRADUATE PROGRAM

Courses in theater arts–open to majors and nonmajors–provide students with a sound liberal education and prepare them for graduate school or professional theater. Each year, the program presents professionally-directed productions of classic and contemporary theater. Theater productions auditions are open to any Clark student. Students who take theater arts courses are required, as part of their course work, to participate in these productions. There are also opportunities for students to act and direct in classes, workshops, and student-sponsored productions, and to audition for Clark Center for Contemporary Performance productions.

The Clark Center for Contemporary Performance is a scholarly community of directors, composers, playwrights, choreographers, film/video makers, and critics devoted to the creation, development, and publication of contemporary works of art as well as to theoretical reflection about the works and their performance. The range of such work includes new scripts, original compositions or scores, translations, transformation of poetry into performance pieces, and explorations of the intersection of music, dance, and video in the performance of existing works. The center is designed to enhance the academic work of the University by organizing and focusing advanced learning through seminars and directed study in music, theater, film, design, literature, and aesthetics. Advanced students are encouraged to develop creative and theoretical projects so that they may take full advantage of the critical evaluation and supervision available at the center, and enrich their educational experience through contact with faculty, other students, and outside artists and performing groups.

THE THEATER ARTS MAJOR

The major consists of a minimum of eleven courses with a focus in one of three tracks: theater history and literature, performance, or production.

Required of all majors: (six core courses)

a.	112	*The Creative Actor*
b.	120	*Technical Theater*
c.	151.1	*Theater in Western Civilization I*
d.	151.2	*Theater in Western Civilization II*
e.	155	*English Drama I*
f.	156	*English Drama II*

In addition:

Required for the Theater History and Literature track: (a minimum of five additional courses)

g. 110 *How Does a Play Work?*
h. at least four additional courses in theater history, dramatic literature, criticism, and aesthetics, as approved by the program director.

Required for the Performance track: (a minimum of five additional courses)

g. 111 *Voice and Diction*
h. 113 *Actor as Thinker*
i. 116 *Movement for the Theater I*
j. 213 *Studio*
k. At least one course from the following:
  117 *Movement for the Theater II*
  165 *French Dramatic Expression*
  167 (Studio Art) *Introduction to Video Production*
  213 *Studio* (may be repeated)
  219 *Directing Seminar*

All declared performance majors are required to attend a weekly movement workshop and a weekly voice workshop.

Required for the Production track: (a minimum of six additional courses)

g. 113 *Actor as Thinker*
h. 123 *Design for Performance*
i. At least four of the following:
  125 *Scenery and Costume Projects (may be repeated)*
  126 *Environmental Studio (formerly 127; incorporates The Physical Theater)*
  127 *Analysis of Theater Production*
  219 *Directing Seminar*
  100 *(Studio Art) Visual Studies – Design*
  102 *(Studio Art) Visual Studies – Drawing*
  136 *(Studio Art) Introduction to Sculpture*
  167 *(Studio Art) Introduction to Video Production*

Approved courses in Art History, Aesthetics, Photography, and English (English 286 through 289)

COURSES

110 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING/Lecture, Discussion

Explores a small group of plays representing several styles, modes, and eras of Western drama, with special emphasis on formal analysis–study of the form and structure of each play. The students are encouraged to arrive at a personal evaluation of the plays. This course satisfies the *verbal expression* skill in the Program of Liberal Studies. No prerequisite. Several short papers.
Mr. Schroeder/Offered every year

111 VOICE AND DICTION/Studio, Tutorial

An intensified phonetic approach to articulation and voice production with some

emphasis on speech for the stage and for public occasions. Several laboratory sessions are provided for individual coaching by the instructor. No prerequisites. This course is nongraded; it must be taken on a credit/no credit basis.
Mr. Schroeder/Offered every year

112 THE CREATIVE ACTOR/Studio
Through a series of workshops, the student becomes familiar with the basic tools necessary to the art of acting. The approach is based on the techniques of Stanislavski, Viola Spolin, Joseph Chaikin, Robert Cohen, and original exercises, including an introduction to basic voice and movement for the actor. No prerequisite. Limit of 25.
Mr. Munro, Mr. DiIorio/Offered every semester

113 ACTOR AS THINKER/Studio, Lecture, Discussion
A conceptual approach to acting theory and its application. Through a series of lectures and exercises, the student develops a greater understanding of script analysis, characterization, style, and the relationship of the actor to the audience. A basic course for all students who intend to continue in acting and directing, and a prerequisite for 213, and 219, Prerequisite: 112. Limited to 15 students.
Mr. Munro/Offered every semester

116 MOVEMENT FOR THE THEATER I/Studio
An exploration of mind/body integration issues, aimed to increase students' understanding and skills of physical freedom and expression. Tools and techniques for developing basic skills of awareness, observation, concentration, and release of habitual tension will be practiced and discussed. Physical approaches to acting will be explored as well as elements of dance and movement composition.
Ms. Trachtenberg/Offered every year

117 MOVEMENT FOR THE THEATER II/Studio
The ideas and techniques of *Movement for the Theater I* are addressed and explored in greater depth. Increased emphasis is placed on the creative process, and students develop movement compositions and scene work with a physical approach. Issues of responsibility and performance also are addressed. Prerequisite: 116, or permission of the instructor.
Ms. Trachtenberg/Offered periodically

119 PUBLIC SPEAKING/Studio
Students are required to make as many speeches as time permits, so that they may master the fundamentals of public speaking, including the most common situations: presentation of information and persuasive speaking. No prerequisite.
Mr. Schroeder/Offered every year

120 TECHNICAL THEATER/Studio, Lecture
Introduction to theatrical production. Students learn techniques and organization skills involved in providing the stage with scenery, lights, and properties. Drafting, scaled ground plans, elements of design, and styles of production are introduced. Makeup, lighting, and set construction in applied lab/crew requirements.
Ms. Kurki/Offered every semester

123 DESIGN FOR PERFORMANCE/Studio, Tutorial
Theory of design/function of visual artist in relationship to production, director or

choreographer. Collaboration in and development of performance art. Historical research in styles of ornament and production. Course includes drawing, painting, and model building. Lab/crew assignments.
Ms. Kurki/Offered every year

125 SCENERY AND COSTUME PROJECTS/Studio, Tutorial
Intermediate level projects in design research and three-dimensional execution for theater production. Prerequisite: permission of the instructor. May be repeated for credit.
Ms. Kurki and Staff/Offered every semester

126 ENVIRONMENTAL STUDIO/Studio, Tutorial (formerly Theater Arts 127)
Study of designed environment and structure as it relates to performance and the physical theater, as well as to contemporary installation projects. Study of public spaces, theater architecture, and site-specific work.
Ms. Kurki/Offered every other year

127 ANALYSIS OF THEATER PRODUCTION/Seminar
Examination of live theater productions through written and verbal criticism. Critical elements of the concept of production are explored through assigned readings and the development of a production proposal/concept. Attendance required at scheduled evening and/or weekend performances in the Worcester/Boston area. A lab fee is collected to pay for tickets and bus rental.
Ms. Kurki/Offered periodically

151.1 THEATER IN WESTERN CIVILIZATION I/Lecture, Discussion
A survey of theater and drama from ancient Greece to the Renaissance, this course considers the form and substance of theatrical presentations and the study of several representative plays from each important era and national theater. No prerequisite. This course satisfies the *aesthetic perspective* requirement.
Mr. Schroeder/Offered every other year

151.2 THEATER IN WESTERN CIVILIZATION II/Lecture, Discussion
A survey of theater and drama from the seventeenth century to the present, this course is a continuation of 151.1. No prerequisite. This course satisfies the *aesthetic perspective* requirement.
Mr. Schroeder/Offered every other year

154.1 MODERN DRAMA I/Lecture, Discussion
A survey of Western drama and theater from Ibsen to World War II. The course traces the development of modern realistic drama and early experimental reactions to realism. No prerequisite. At least three papers or exams.
Mr. Schroeder, Ms. Bessell/Offered every other year

154.2 MODERN DRAMA II/Lecture, Discussion
A survey of Western drama and theater from World War II to the present, this course examines several of the major postwar movements and the radical dramatic forms they have produced. This course satisfies the *verbal expression* requirement. No prerequisite. At least three papers or exams.
Mr. Schroeder, Ms. Bessell/Offered every other year

155 ENGLISH DRAMA I/Lecture, Discussion
Refer to course description under English 122.
Ms. Vaughan/Offered every other year

156 ENGLISH DRAMA II/Lecture, Discussion
Refer to course listing under English 123.
Mr. Sultan/Offered every other year.

164 THE AMERICAN MUSICAL THEATER/Lecture, Discussion
While some attention is paid to the history of the musical theater in the United States, primary emphasis is on the study and analysis of several important contemporary musicals, and on the form and structure of books, lyrics, and music. No prerequisite. At least three papers, exams, or creative projects.
Mr. Schroeder/Offered periodically

185 TENNESSEE WILLIAMS/Lecture, Discussion
An intensive study of the playwright's work concentrating on his development as an artist. No prerequisite, but some experience in drama and literature is expected.
Mr. Schroeder/Offered periodically

199 THE WRITER'S CRAFT/Seminar
This course utilizes a series of exercises and discussions to explore different elements of the craft of dramatic writing, offering the student the opportunity to practice the various aspects of scene writing, and to discover the technical elements that comprise a well-wrought scene. The issues of person, location, action, and voice are addressed critically. As the students' scenes are discussed and examined, ways to reconstruct and refocus the scene are explored.
Mr. Brooks/Offered every other year

213 STUDIO
A scene study course applying the methods, theories, and approaches discussed in 113, to working on stage, film, and video. Students are required to present several scenes of different periods and styles for discussion, critical written review, and further development by classmates and director. The content varies each time the course is taught. May be repeated for credit. Lab and crew hours are required. Prerequisite: 113.
Mr. Munro, Mr. DiIorio/Offered every semester

219 DIRECTING SEMINAR
Introduces the principles of directing for the stage through theory, practical application, and discussion. Students study problems of interpretation and concept; the role of the director as creative and interpretive artist; and relationship to designer, stage manager, and actors. Additional lab time is required. Prerequisites: 113, and permission of instructor.
Mr. Munro/Offered every year

286 IBSEN/Lecture, Discussion
An intensive study of the playwright's major works. Independent research and study is emphasized. Prerequisite: permission of instructor.
Mr. Schroeder/Offered periodically

SPECIAL OFFERINGS

299.1 DIRECTED READING
Staff

299.2 DIRECTED RESEARCH
Staff

299.3 DIRECTED WRITING
Staff

299.4 FIELD PROJECT
Staff

299.5 SPECIAL PROJECT
Staff

299.6 SPECIAL TOPICS
Staff

299.9 IINTERNSHIP
Staff

With permission of the program director, the following courses offered by other departments may be taken for theater history and literature credit:

Classics 135 CLASSICAL GREEK TRAGEDY
Refer to course listing under Classics 135.
Mr. Burke/Offered every other year

English 120 INTRODUCTION TO SHAKESPEARE
Refer to course listing under English 120.
Ms. Vaughan and Ms. Gertz/Offered every year

English 253 ADVANCED STUDIES IN SHAKESPEARE/Seminar
Refer to course listing under English 253.
Ms. Vaughan/Offered every year

French 165 FRENCH DRAMATIC EXPRESSION: PLAY PRODUCTION/Lecture, Discussion
Refer to course listing under Foreign Languages and Literatures 165.
Mr. Spingler/Offered every other year

French 170 THE MODERN FRENCH THEATER: EXPERIMENTS OF THE AVANT-GARDE/Lecture, Discussion
Refer to course listing under Foreign Languages and Literatures 170.
Mr. Spingler/Offered periodically

German 166 GERMAN DRAMA FROM LESSING TO BRECHT/Lecture, Discussion
Refer to course listing under Foreign Languages and Literatures 166.
Mr. Kaiser/Offered every other year.

Women's Studies

PROGRAM FACULTY

Rachel Joffe Falmagne, Ph.D., Psychology, *program director:* women, psychology and society; language and thought; semantic development; reasoning

Parminder Bhachu, Ph.D., Henry R. Luce Professor of Cultural Identity and Global Processes: urban anthropology, international migration and immigration, race, ethnicity, gender, culture, class and consumption, multiculturalism

Marcia Butzel, Ph.D., Foreign Languages and Literatures: film and cultural studies

Maria Acosta Cruz, Ph.D., Foreign Languages and Literatures: Latin American literature and comparative literature

Judith Wagner DeCew, Ph.D., Philosophy: ethics, philosophy of law, social and political theory

Carol D'Lugo, Ph.D., Foreign Languages: Latin American literature, Spanish culture, Mexican women writers

Sarah Deutsch, Ph.D., History: U.S. social history and U.S. women

Cynthia H. Enloe, Ph.D., Government and International Relations: women and politics, militarization, Asian and British politics, ethnic and racial politics

Patricia M. Ewick, Ph.D., Sociology: research methods; gender, law, criminology

SunHee Kim Gertz, Ph.D., English: Western European medieval literature, theory, and characterization of women

Bonnie Grad, Ph.D., Visual and Performing Arts: nineteenth- and twentieth- century U.S. American and Western European painting, history of landscape art, women artists

Beverly Grier, Ph.D., Government and International Relations: comparative politics, African politics, politics of land, and women's and children's labor

Susan E. Hanson, Ph.D., Geography: urban-social geography, transportation, local labor markets

Serena S. Hilsinger, Ph.D., English: modernist literature, women writers

Fern Johnson, Ph.D., English: language, communication, and culture, with special emphasis on gender and race, feminist linguistics

Dorothy Kaufmann, Ph.D., Foreign Languages and Literatures: contemporary French feminism, women writers, comparative cultural studies

Sharon Perlman Krefetz, Ph.D., Government and International Relations: urban politics, suburban politics, women and politics

Dianne Rocheleau, Ph.D., Geography: gender, ecology, landscape, forestry, international development

Paul S. Ropp, Ph.D., History: Chinese social and intellectual history, women in China

Christina Sommers, Ph.D., Philosophy: history of ethics, contemporary moral theory

Shelly Tenenbaum, Ph.D., Sociology: Judaic studies, race/ethnicity, social stratification, Jewish women in the U.S. and Europe

Barbara Thomas-Slayter, Ph.D., Program of International Development: community organization, Third-World women and public policy, rural development, gender and environment

Virginia Vaughan, Ph.D., English: Shakespeare, Renaissance drama, nondramatic Renaissance literature

NOTE: In addition to the above faculty, who teach regularly in the program, other members of the faculty from a number of departments are active participants in the Women's Studies Program and offer courses that include a significant women's studies component or have research interests in this area.

UNDERGRADUATE PROGRAM

Women's studies is an interdisciplinary field of study and scholarship that stresses the interconnectedness of phenomena and questions at various levels of analysis. The characterization of women and men in literature, the cultural images of women, the societal structures in which we function, and the qualities of individual women's experiences form an interrelated and inseparable cluster of phenomena for study. Courses that speak to the social and political roles and cultural formulations of women's and men's positions in society are offered in a number of departments.

Women's studies takes a situated approach to questions and problems. That is, people, historical constructs, literature, art, are seen as situated within their social context, and gender categories are fundamental categories with which to describe both the context and individual experience. Women's studies stresses the diversity of women's experiences, and a number of courses examine how ethnicity, race, and class shape women's experiences as well as their social context and the construction of gender

Concentration

The program offers a concentration in women's studies, which may be taken along with any departmental major. "Women's Studies Concentration" will appear on the student's graduating transcript along with her/his major. In addition, interested students may design a major in women's studies via the University's self-designed major mechanism.

The following sequence of courses is required for a *concentration*:

- A major in an established department or a self-designed major
- *Introduction to Women's Studies*
- Four additional courses listed as part of the Women's Studies Program. (It is strongly recommended that these include a variety of disciplinary approaches.)
- An internship, special project, or advanced research seminar in women's studies.

DOCTORAL PROGRAM

Program Goals and Emphasis

The Ph.D. in Women's Studies is designed for future academics as well as for professionals in public policy, government, and the private sector. Those with degrees in traditional disciplines who wish to broaden their approach along feminist lines are encouraged to apply, as well as those already holding B.A. or M.A. degrees in women's studies.

The goals of the Ph.D. program are to provide a foundation in women's studies as an integrated, cohesive discipline and, at the same time, to enable students to gain competence in focused segments of that discipline. To that effect, the core of the program includes a year-long, team-taught, cross-disciplinary course in the foundations of feminist inquiry and methodology, as well as a proseminar and a research colloquium. In addition to these four-credit core courses, students take seminars and courses to acquire in-depth proficiency in one of three interdisciplinary areas, flexibly defined as:

- Geography, Environment, and Development
- Language, Literature, and the Arts
- History, Psychology, and Society

Students with different interests have the opportunity to formulate a program of studies consonant with their goals in consultation with an advisory committee. Overall course work must ensure breadth of interdisciplinary knowledge, as well as depth of understanding in the area of chosen expertise.

We believe that complex issues must be addressed beyond traditional disciplinary and classroom boundaries and that phenomena and questions at different levels of analysis are inherently interconnected. The Clark Women's Studies Ph.D. Program, therefore, provides a broad foundation in feminist theory and methodology and stresses interrelations among areas of inquiry. Because feminist scholarship and constructs are, by design, fluid, and feminist scholars continuously reformulate theoretical analyses, our program provides Ph.D. candidates with a wide array of theoretical and methodological approaches to prepare them to formulate their own approach to the problems they choose to pursue. Finally, the program recognizes the diversity and contextually situated nature of women's experiences and, indeed, of any social and cultural construct.

The Women's Studies Ph.D. Program is designed primarily for full-time students. However, we are fully aware that some students' responsibilities will require that they carry on their doctoral work on a less-than-full-time basis, and some part-time students will be accepted selectively. The student's advisory committee will work with the student to ensure coherence, completion, and a sense of community. Students who want to consider a part-time schedule should let the program director know *as soon as possible*.

The Advisory Committee

For each student, the Women's Studies Graduate Curriculum Committee assigns an advisory committee composed of two women's studies faculty from different departments. A student in the program may change advisors at any time with the agreement of the proposed new advisor, the former advisor, and the program director.

One function of the advisory committee is to guide students in the formulation of their scholarly interests and to develop a program of studies appropriate to those interests, ensuring that the student will achieve interdisciplinary breadth as well as depth in an area of expertise.

In addition, the committee provides clearance on particular courses or arrangements, as when a student enrolls in a 200-level undergraduate course and needs to determine what additional work is to be achieved. At the point of the Ph.D. dissertation proposal, it is the student's Ph.D. dissertation committee that serves as the student's primary advisory group.

General requirements of the graduate program (Total: 16 credits)

The core:

(a) *Graduate Proseminar in Women's Studies* (WS 300) one credit

All students entering with a B.A. or M.A. are required to take this course in their first year.

(b) *Foundations of Feminist Inquiry* (WS 301) year-long, 2 credits

All students entering with a B.A. or M.A. are required to take this two-credit course in the fall and spring of their first year.

(c) *Graduate Research Colloquium in Women's Studies* (WS 302) one credit

While working on the dissertation, usually in the third or fourth year, the student participates in this seminar-styled colloquium. Students also are encouraged to participate in the colloquium regularly, since it serves as a forum for discussing the ongoing projects of both peers and faculty.

Other requirements

(d) Residency requirement

We require a minimum of three years residency.

(e) Language requirement

Although we have no across-the-board language requirement, a work in proficiency in one or more languages relevant to the student's areas of scholarship may be required, based upon the recommendation of the student's advisory committee.

(f) *A minimum of twelve credits in addition to the four core credits described above*

Full-time Ph.D. student normally takes four credits of courses per semester. Some of these are in the form of directed readings or independent research courses.

The student's concentration governs the particular sequence of courses taken. Overall course work must ensure breadth of interdisciplinary knowledge as well as depth of understanding in the area of chosen expertise. A minimum of 8 courses must be taken in women's studies. For courses outside of women's studies, approval must be obtained from the Women's Studies Ph.D. Curriculum Committee. No more than 5 courses may be taken at the 200 level–i.e., mixed upper level undergraduate/graduate; for these, additional work must be completed, as determined by the instructor and approved by the student's advisory committee.

(g) *Teaching experience*

Although we do not require it, we strongly encourage students to gain teaching experience during their doctoral studies.

(h) *M.A. thesis (one credit)*

At the end of the second year of full-time residency (or its equivalent for parttime students), a student must produce a master's thesis. If the student opts for research work, the thesis is expected to have the same scope as a publishable journal article. To serve as a master's thesis, a creative project is expected to make a roughly equivalent contribution. Writing this research paper counts as one of the 12 credits listed above under (f).

If a student enters with a master's degree, the M.A. thesis requirement may be waived. The student must petition the graduate curriculum committee to that effect.

Note: Admission to the program is for the Ph.D., and normally all students continue through to a Ph.D. There is no separate Women's Studies M.A. Program. However, if *unusual* circumstances arise, and a student must leave this program after finishing all the steps up to this point, an M.A. will be awarded.

At the master's level, there exist concentrations in women's studies within the International Development Program (Women and Development) and within the English Department.

(i) *Oral comprehensive examination*

In the first semester of the third year, the student takes the oral comprehensive exam, the successful completion of which is required for Ph.D. candidacy. In addition to the advisory committee, another faculty member, selected by the committee and the student, serves to evaluate the candidate's performance.

If the student does not pass the oral comprehensive examination, he/she is allowed to take it a second time.

(j) *Ph.D. proposal*

A Ph.D. proposal is written in conjunction with the student's self-elected Ph.D. committee (three members, at least two of whom should be from the women's studies faculty) and approved by the Women's Studies Graduate Curriculum Committee. No longer than 15 double spaced pages, it should: explain the student's working hypothesis, summarize relevant critical literature and evidence to be used, describe and justify one's research methodology, while also providing examples, bibliography, projected chapter divisions (or other form of the plan), and time schedule.

(k) *Ph.D. dissertation*

The Ph.D. dissertation is a substantial, independently conducted and intensively researched work of scholarship.

(l) *Ph.D. presentation*

Upon approval of the Ph.D. dissertation by the student's committee, the student presents findings to members of his or her dissertation committee; this presentation is open to the Clark community and guests. The committee, along with other women's studies faculty members present, evaluates the student's performance. The primary reader combines this evaluation with the thesis committee's evaluation of the dissertation and sends the final recommendation for the Ph.D. degree to the dean of graduate studies and research.

Where it seems appropriate, a student may construct a program and dissertation topic drawing on a specific traditional discipline, but it must be in a clearly interdisciplinary Women's Studies spirit.

Leaves of Absence

At the request of the student, a leave of absence may be granted from the graduate program for personal reasons or in order to pursue scholarly activity or training at another institution. A leave normally is given for no more than one year. Only under unusual circumstances is a leave extended. Moreover, a leave pushes back the student's existing schedule for the completion of program requirements by the duration of the leave. (For example, a student taking a year's leave for personal reasons from the second year of graduate study is expected to meet the program requirements for the second year graduate students at the end of the next academic year following return to the program). Students who are not behind in program requirements and who wish to be considered for financial assistance upon return from a leave must notify the program in writing of the expected return by **January 15**. Requests for a leave of absence must be made one month prior to the end of the preceding semester.

Grading

Anything lower than a "B-" is not acceptable and means that the course must be repeated. To remain in good standing, the student must maintain a "B" average. A final grade of "F" constitutes grounds for withdrawal from the program.

A Pass (P)/No-Record (NR) grading option may be elected, whereby "P" signifies that the student has performed at a "B-" or above level, as determined by the letter grade handed in by the faculty member.

Incompletes ("I") are given at the discretion of the instructor, and one additional semester is granted to complete course work.

COURSES

The following is a list of Clark's women's studies course offerings; more information can be obtained from participating faculty or from the Women's Studies Office, Carriage House, First floor, 125 Woodland Street (508) 793-7358.

In addition to courses offered by the undergraduate college and listed below, women's studies concentrators also have the opportunity to enroll in selected courses offered by the College of Professional and Continuing Education (COPACE). COPACE provides a diverse list of courses that is revised each year and is enriched by collaboratives with various cultural institutions in Worcester. Contact the registrar in COPACE directly (508-793-7217) for current academic year and summer offerings.

037 GENDER, SPACE AND ENVIRONMENT

Refer to course description under Geography 037.
Ms. Rocheleau/Offered every year

110 INTRODUCTION TO WOMEN'S STUDIES

Refer to course description under Sociology 110.
Ms. Ewick/Staff Offered every year

133 FICTION BY WOMEN WRITERS, 1688-1899

Refer to course description under English 133.
Ms. Hilsinger/Offered every other year

134 MODERN FICTION BY WOMEN WRITERS

Refer to course description under English 134.
Ms. Hilsinger/Offered every other year

136 WOMEN IN HISPANIC LITERATURE

Refer to course description under Spanish 136.
Ms. O'Connell, Staff/Offered every other year

150 MEDIEVAL LITERATURE

Refer to course description under English 150.
Ms. Gertz/Offered every year

175 WOMEN AND POLITICS

Refer to course description under Government 175.
Ms. Krefetz/Offered every year

184 ART IN CULTURE: THE PAINTINGS OF GEORGIA O'KEEFFE
Refer to course description under Art History 184.
Ms. Grad/Offered every year

185 WOMEN'S WRITING IN TWENTIETH-CENTURY FRANCE
Refer to course description under French 185.
Ms. Kaufmann/Offered every other year

191 LANGUAGE DIVERSITY IN THE UNITED STATES
Refer to course description under English 191.
Ms. Johnson/Offered every year

203 AMERICAN JEWISH LIFE
Refer to course description under Sociology 203.
Ms. Tenenbaum/Offered every year

208 COMPARATIVE POLITICS OF WOMEN
Refer to course description under Government 208.
Ms. Enloe/Offered every other year

212 WOMEN AND SOCIAL CHANGE
Refer to course description under International Development 212.
Ms. Thomas-Slayter/Offered every year

213 GENDER AND THE CITY IN THE U.S.
Refer to course description under History 213/313.
Ms. Deutsch/Offered periodically

219 HISTORY OF AMERICAN WOMEN
Refer to course description under History 219.
Ms. Deutsch/Offered every year

224 HISTORY OF AFRICAN AMERICAN WOMEN/Seminar
Refer to course description under Government 225/History 224.
Ms. Grier/Offered every other year

228 COMPARATIVE POLITICS OF RACE, ETHNICITY AND GENDER
Refer to course description under Government 228.
Ms. Enloe/Offered every other year

244 GENDER, WORK, AND SPACE
Refer to course description under Geography 244.
Ms. Hanson/Offered every other year

247 WOMEN IN SOCIETY/Seminar
Refer to course description under Psychology 249.
Ms. Joffe Falmagne/Offered every year

248 WOMEN AND ART/Seminar
Refer to course description under Art History 248.
Ms. Grad/Offered every other year

249 SIGNS AND CROSSROADS: SEMIOTIC THEORY AND PRACTICE
Refer to course description under English 249.
Ms. Gertz/Offered periodically

250 MEDIEVAL LITERATURE
Refer to course description under English 250.
Ms. Gertz/Offered every other year

251 RACE, MIGRATION, GENDER, AND ETHNICITY
Refer to course description under Cultural Identity and Global Processes 271.
Ms. Bhachu/Offered every other year

252 THE JONAS AND SUSAN CLARK COLLECTION/Seminar
Refer to course description under Art History 250.

253 CULTURE AND CONSUMPTION IN LOCAL AND GLOBAL CONTEXTS
Refer to course description under Cultural Identity and Global Processes 275.
Ms. Bhachu/Offered every other year

255 THE FAMILY
Refer to course description under Sociology 255.
Ms. Merrill/Offered every year

256 STUDIES IN THE RENAISSANCE
Refer to course description under English 255.
Ms. Vaughan/Offered every other year

261 WOMEN AND MILITARIZATION IN A COMPARATIVE POLITICS PERSPECTIVE
Refer to course description under Government 261.
Ms. Enloe/Offered every other year

275 WORKS OF VIRGINIA WOOLF
Refer to course description under English 275.
Ms. Hilsinger/Offered every other year

276 POLICIES, PROJECTS, AND STRATEGIES FOR CHANGE: A FOCUS ON GENDER
Refer to course description under International Development 275.
Ms. Thomas-Slayter/Offered every year

277 GENDER, RESOURCES, AND DEVELOPMENT/Seminar
Refer to course description under Geography 277.
Ms. Rocheleau/Offered every other year

282 CHINESE WOMEN IN LITERATURE AND SOCIETY
Refer to course description under History 282.
Mr. Ropp/Offered every other year

299 GENDER AND FILM
Refer to course description under Screen Studies 299.
Ms. Butzel/Offered every other year

299.1 UNDERGRADUATE DIRECTED READINGS IN WOMEN'S STUDIES

299.2 UNDERGRADUATE DIRECTED RESEARCH IN WOMEN'S STUDIES

299.5 UNDERGRADUATE SPECIAL PROJECT IN WOMEN'S STUDIES

299.9 UNDERGRADUATE INTERNSHIP IN WOMEN'S STUDIES

300 GRADUATE PROSEMINAR IN WOMEN'S STUDIES

This seminar surveys theoretical analyses and empirical research pertaining to the roles of women in societies and cultures, to cultural representations of women, and to women's individual functioning and development in context. The course draws on the expertise of faculty associated with the Women's Studies Program and is an introduction to all three areas of concentration within the program. It is designed to reflect the practice of interdisciplinary linking and to foster integration between theoretical perspectives and between levels of analysis.

Arranged as an overlapping, interlocking discussion, the topics include women and economic development; women, societies, and the political process; women's history and diversity; the gendering of social institutions and of labor practices; sociolinguistic, semiotic, and cognitive analyses of language, gender, and power; the social construction of gender, self, and identity; feminist perspectives on diversity and difference; representation of women in literature and in art; and women writers, artists, and composers. Specific topics will vary from year to year.
Staff/Offered every year (Ms. Joffe Falmagne, 1992-93)

301 FOUNDATIONS OF FEMINIST INQUIRY/Two semesters

Overview of recent theoretical analyses and of methodological issues pertaining to the conduct of feminist inquiry in the humanities and social sciences. The course provides an interdisciplinary analysis of theories of gender and of the relations between gender and power. The approaches surveyed reflect alternative theoretical perspectives and span literary and cultural theory, social and political theory, feminist epistemology, theories of differences, and theories of individual development.
Staff/Offered every year

302 GRADUATE RESEARCH COLLOQUIUM IN WOMEN'S STUDIES

Staff/Offered every year

305 FEMINIST FILM THEORY AND CRITICISM/Seminar

This seminar explores the emergence of feminist film criticism from the women's movement of the 1970s and its subsequent elaboration via such theoretical frameworks as semiotics, psychoanalysis, Marxism, and poststructural approaches to culture. Emphasis is placed on understanding the role of critical theory in feminist analysis of contemporary culture, particularly film and television texts. Reading includes work by Freud, Foucault, Lacan, Metz, Mulvey, de Lauretis, and Doane. Seminar participants analyze a range of film, video, and television texts in weekly screenings and discussions. This seminar is open to graduate students and advanced undergraduates with permission.
Ms. Butzel/Offered every year

333.1 ADVANCED TOPICS IN WOMEN'S HISTORY
Refer to course description under History 333.1
Ms. Deutsch/Offered every other year

333.2 ADVANCED RESEARCH SEMINAR
Refer to course description under History 333.2
Ms. Deutsch/Offered every other year

399.1 GRADUATE DIRECTED READINGS IN WOMEN'S STUDIES/Tutorial
Staff/Offered every semester

399.2 GRADUATE DIRECTED RESEARCH IN WOMEN'S STUDIES/Tutorial
Staff/Offered every semester

399.3 GRADUATE DIRECTED WRITINGS IN WOMEN'S STUDIES

399.5 GRADUATE SPECIAL PROJECT IN WOMEN'S STUDIES

Faculty

Members of the faculty and officers are listed alphabetically with their titles, degrees, and years at Clark.

PRESIDENT

RICHARD P. TRAINA, Ph.D., President of the University. B.S., University of Santa Clara, 1958; M.A., University of California, Berkeley, 1960; Ph.D., 1964. (1984-)

EMERITI

HARRY C. ALLEN JR., Ph.D., Professor of Chemistry, Emeritus. B.S., Northern University, 1948; Sc.M., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-1986)

ROY S. ANDERSEN, Ph.D., Professor of Physics, Emeritus. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-1992)

KARL O.E. ANDERSON, Ph.D., Professor of English, Emeritus. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-1976)

MORTIMER H. APPLEY, Ph.D., President, Emeritus; Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950; D.Sc., York University, 1975; L.H.D., Northeastern University, 1983; Litt. D., American International College, 1984; LL.D., Clark University, 1984. (1974-1983)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages, Emeritus. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

GEORGE A. BILLIAS, Ph. D., Professor of History, Emeritus. A.B., Bates College, 1948; M.A., Columbia University, 1949; Ph. D., 1958. (1962-1989)

ROBERT F. CAMPBELL, Ph.D., Professor of American History, Emeritus. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-1957; 1960-)

WILLIAM H. CARTER JR., Ph.D., Professor of English, Emeritus. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-1984)

SAMUEL P. COWARDIN III, Ph.D., Associate Professor of Art History, Emeritus. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-1986)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English, Emeritus. (1957-1975)

TAMARA DEMBO, Ph.D., Associate Professor of Psychology, Emeritus. (1953-1972)

WESLEY M. FULLER, M.Mus., George N. and Selma U. Jeppson Professor of Music, Emeritus. B.Mus., Oberlin Conservatory,1953; M.Mus, Boston University, 1958. (1963-1990)

PETER P. GIL, Ph.D., Professor of Management, Emeritus. A.B., Harvard University, 1949; M.B.A., Harvard Business School, 1951; Ph.D., University of Geneva, 1963. (1981-1988)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1946-1973)

HELEN J. KENNEY, Ed.D., Professor of Education, Emeritus. A.B., Emmanuel College, 1944; M.Ed., Boston College, 1953; Ed.D, Boston University, 1959. (1968-1990)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Emeritus. Adviser to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-1985)

DUANE S. KNOS, Ph.D., Professor of Geography, Emeritus. B.A., Upper Iowa College, 1947; M.A., University of Iowa, 1953; Ph.D., 1956. (1970-1987)

HOWARD NICHOLSON, Ph.D., Professor of Economics, Emeritus. A.B., Oberlin College, 1942; M.A., Harvard University, 1948; Ph.D., 1953. (1958-1986)

J. RICHARD REID, Ph.D., Professor of Romance Languages, Emeritus. (1944-1976)

HARRY E. SCHWARZ, B.C.E., P.E., Professor of Environment, Technology and Society, Emeritus. B.C.E., George Washington University, 1954. (1973-1987)

JOHN S. STUBBE, Ph.D., Associate Professor of Mathematics, Emeritus. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-1980)

THEODORE H. VON LAUE, Ph.D., Jacob and Frances Hiatt Professor of History, Emeritus. B.A., Princeton University, 1939; Ph.D., 1944. (1970-1983)

SEYMOUR WAPNER, Ph.D., Executive Committee, Heinz Werner Institute; G. Stanley Hall Professor of Genetic Psychology, Emeritus. A.B., New York University, 1939; A.M., University of Michigan, 1940; Ph.D., 1943. (1948-1988)

MORTON WIENER, Ph.D., Professor of Psychology, Emeritus. B.S., City College of New York, 1949; M.S.Ed., 1950; Ph.D., University of Rochester, 1953. (1957-1990)

FULL-TIME INSTRUCTIONAL FACULTY
Tenured, Tenure-line, and Long-term Visiting Appointments
(See individual departments for other appointments.)

MARIA I. ACOSTA CRUZ, Ph.D., Assistant Professor of Spanish. B.A., University of Puerto Rico, Mayaguez, 1978; M.A., State University of New York at Binghamton, 1980; Ph.D., 1984. (1986-)

CHARLES C. AGOSTA, Ph.D., Assistant Professor of Physics. B.A., Wesleyan University, 1980; Ph.D., Duke University, 1986. (1991-)

VERNON AHMADJIAN, Ph.D., Professor of Biology. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-)

ROYCE ANDERSON, Ph.D., Assistant Professor of Management. B.A., Drew University, 1970; M.Div., 1974; M.B.A., Rutgers University, 1981; M.Phil., City University of New York, 1988; Ph.D., Baruch College, CUNY, 1989. (1990-)

DAVID P. ANGEL, Ph.D., Associate Professor of Geography. B.A., Cambridge University (England), 1980; M.A., University of California, Los Angeles, 1984; Ph.D., 1988. (1987-)

MICHIKO Y. AOKI, Ph.D., Assistant Professor of Japanese. A.M., Syracuse University, 1963; Ph.D., Columbia University, 1970. (1990-)

MARGARETE ARNDT, Ph.D., Assistant Professor of Management. M.B.A., Simmons College, 1982; Ph.D., Boston University, 1991. (1990-)

SANDRA T. AZAR, Ph.D., Associate Professor of Psychology. B.A., Wheaton College, 1974; M.A., University of Rochester, 1982; Ph.D., 1984. (1986-)

SUBRAMANIAN BALACHANDER, Ph.D., Assistant Professor of Marketing. B. Tech, Indian Institute of Technology, Madras, 1979; P.G.D.M. (Post Graduate Degree in Management), Indian Institute of Management, Calcutta, 1983; M.S., Carnegie Mellon University, 1988; Ph.D., 1991. (1992-)

ROBERT W. BAKER, Ph.D., Professor of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

MICHAEL BAMBERG, Ph.D., Associate Professor of Psychology. M.Phil., University of York, England, 1978; Ph.D., University of California, Berkeley, 1985. (1988-)

KENNETH J. BASYE, Ph.D., Instructor of Mathematics and Computer Science. B.A. and B.S., The Evergreen State College, 1984; Sc.M., Brown University, 1989; Ph.D., 1993. (1992-)

BRIAN BELET, D.M.A., Assistant Professor of Music. B.Mus., Arizona State University, 1982; M.Mus., University of Illinois, Urbana-Champaign, 1983; D.M.A., 1990. (1990-)

DANA BENELLI, Ph.D., Assistant Professor of Screen Studies. B.A., Stanford University, 1970; B.A., The University of Washington, 1978; M.A., The University of Iowa, 1982; Ph.D. 1992. (1990-)

THOMAS F. BERNINGHAUSEN, Ph.D., Assistant Professor of English. A.B., Oberlin College, 1979; Ph.D., State University of New York, Buffalo, 1988. (1989-)

PARMINDER K. BHACHU, Ph.D., Henry R. Luce Associate Professor of Cultural Identity and Global Processes. B.Sc., University College, London, 1976; Ph.D., London University, 1981. (1991-)

ROGER BIBACE, Ph.D., Professor of Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

BARBARA BIGELOW, Ph.D., Assistant Professor of Management. B.A., Cornell University, 1973; M.A., Simmons College, 1980; Ph.D., Sloan School of Management, Massachusetts Institute of Technology, 1987. (1989-)

S. LESLIE BLATT, Ph.D., Professor of Physics. A.B., Princeton University, 1957; M.S., Stanford University, 1959; Ph.D., 1965. (1987-)

CHARLES S. BLINDERMAN, Ph.D., Professor of English; Adjunct Professor of Biology. A.B., New York University, 1952; A.M., 1953; Ph.D., Indiana University, 1957. (1962-)

JOHN BLYDENBURGH, Ph.D., Professor of Government. B.A., Harpur College, 1965; Ph.D., University of Rochester, 1969. (1975-)

DANIEL R. BORG, Ph.D., Professor of History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)

MARTYN J. BOWDEN, Ph.D., Professor of Geography; Adjunct Professor of Comparative Literature. B.A., London University, 1957; M.A., University of Nebraska, 1959; Ph.D., University of California, Berkeley, 1967. (1964-)

ROBERT C. BRADBURY, Ph.D., Associate Professor of Management. B.S., Holy Cross College, 1967; M.S. in Administration, George Washington University, 1971; M.S. in Preventive Medicine, Ohio State University, 1973; Ph.D., 1975. (1981-)

DAEG S. BRENNER, Ph.D., Professor of Chemistry; Adjunct Professor of Physics. B.S., Rensselaer Polytechnic Institute, 1960; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)

JOHN J. BRINK, Ph.D., Professor of Biology; Adjunct Professor of Chemistry; Chair, Department of Biology. B.Sc., University of Orange Free State, 1955; B.Sc. (Hons), University of Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)

HALINA S. BROWN, Ph.D., Associate Professor of Environment, Technology and Society; Director, Environment, Technology and Society Program. B.Sc., Washington University, 1971; Ph.D., New York University, 1975. (1985-)

JOHN C. BROWN, Ph.D., Associate Professor of Economics. B.A., University of Wisconsin, 1978; M.A., University of Michigan, 1984; Ph.D., 1986. (1986-)

NANCY BUDWIG, Ph.D., Associate Professor of Psychology. B.A., Vassar College, 1979; Ph.D., University of California, Berkeley, 1986. (1988-)

SARAH D. BUIE, M.F.A., Associate Professor of Graphic Design. B.S., Wellesley College, 1971; M.F.A., Yale University, 1978. (1981-)

PAUL F. BURKE JR., Ph.D., Associate Professor of Classics; Adjunct Associate Professor of History. A.B., Stanford University, 1965; Ph.D., 1971. (1976-)

MARCIA BUTZEL, Ph.D., Associate Professor of French; Acting Director, Screen Studies Program, spring semester. B.A., Bryn Mawr College, 1975; M.A., University of Iowa, 1977; Ph.D., 1984. (1984-)

GERALD R. CASTONGUAY, Ph.D., Associate Professor of Music; Director, Music Program; Chair, Department of Visual and Performing Arts. B.Mus., Boston University, 1959; M.Mus., Hartt College of Music, 1963; M.A., Harvard University, 1965; Ph.D., Rutgers University, 1975. (1970-)

GARY N. CHAISON, Ph.D., Professor of Management. B.B.A., Baruch College, 1966; M.B.A., 1967; Ph.D., State University of New York at Buffalo, 1972. (1981-)

ARTHUR CHOU, Ph.D., Associate Professor of Mathematics. B.Sc., Tunghai University, Taiwan, 1976; Ph.D., State University of New York at Stony Brook, 1982. (1982-)

LEONARD E. CIRILLO, Ph.D., Associate Professor of Psychology. B.A., City College of New York, 1958; M.A., Clark University, 1962; Ph.D., 1965. (1968-)

JOHN J. CONRON, Ph.D., Associate Professor of English; Adjunct Associate Professor of Comparative Literature; Adjunct Associate Professor of Art History and Criticism. A.B., Brown University, 1961; M.A., University of Michigan, 1966; Ph.D., 1970. (1977-)

BRIAN J. COOK, Ph.D., Associate Professor of Government; Chair, Department of Government and International Relations. B.A., Cleveland State University, 1977; M.A., University of Maryland, 1982; Ph.D., 1984. (1984-)

JOSEPH C. CURTIS, Ph.D., Professor of Biology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)

JOHN S. DAVIES, Ph.D., Associate Professor of Physics. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)

JUDITH W. DECEW, Ph.D., Associate Professor of Philosophy. B.A., University of Rochester; M.A., University of Massachusetts-Amherst; Ph.D., 1978. (1987-)

JOSEPH deRIVERA, Ph.D., Professor of Psychology. B.A., Yale University, 1953; Ph.D., Stanford University, 1961. (1970-)

PATRICK G. DERR, Ph.D., Associate Professor of Philosophy; Chair, Department of Philosophy. B.A., Seattle University, 1972; Ph.D., University of Notre Dame, 1976. (1976-)

SARAH J. DEUTSCH, Ph.D., Associate Professor of History. B.A., Yale University, 1977; M.Litt., Oxford University, 1980; Ph.D., Yale University, 1985. (1989-)

DILEEP G. DHAVALE, Ph.D., Associate Professor of Management. B.S., Indian Institute of Technology, Bombay, 1969; M.S., State University of New York, Buffalo, 1972; Ph.D., Pennsylvania State University, 1975. (1987-)

DAVID K. DICKINSON, Ed.D., Associate Professor of Education. B.A., Oberlin College, 1971; Ed.M., Temple University, 1976; Ed.D., Harvard University, 1982. (1988-)

CAROL C. D'LUGO, Ph.D., Associate Professor of Spanish. B.A., Douglass College, 1965; M.A., University of Illinois, 1967; Ph.D., Brown University, 1983. (1984-)

MARVIN A. D'LUGO, Ph.D., Professor of Spanish; Adjunct Professor of Screen Studies; Director, Screen Studies Program. B.A., Brooklyn College, 1965; M.A., University of Illinois, 1967; Ph.D., 1969. (1972-)

LINDA J. DUSMAN, D.M.A., Assistant Professor of Music. B.Mus., The American University, 1978; M.A., 1981; D.M.A., The University of Maryland, 1988. (1988-)

J. RONALD EASTMAN, Ph.D., Associate Professor of Geography. B.A., Bishop's University, 1971; M.A., Queen's University, Ontario, 1977; Ph.D., Boston University, 1982. (1981-)

JAMES P. ELLIOTT, Ph.D., Associate Professor of English; Adjunct Associate Professor of Screen Studies. B.A., Stanford University, 1966; Ph.D., Indiana University, 1971. (1971-)

PRISCILLA ELSASS, Ph.D., Assistant Professor of Management. B.S., Cornell University, 1975; M.P.S., 1976; M.B.A., The University of Connecticut, Storrs, 1989; Ph.D., 1992. (1991-)

JACQUE L. EMEL, Ph.D., Associate Professor of Geography. B.A., University of Kansas, 1972; M.S., Pennsylvania State University, 1977; Ph.D., University of Arizona, 1983. (1984-)

CYNTHIA ENLOE, Ph.D., Professor of Government and International Relations. B.A., Connecticut College, 1960; M.A., University of California, Berkeley, 1963; Ph.D., 1967. (1972-)

YOUNG SOOK EOM, Ph.D., Assistant Professor of Economics. B.A., Chonbuk National University, Korea, 1981; M. of Economics, North Carolina State Univeristy, 1987; Ph.D., 1992. (1992-)

KAREN L. ERICKSON, Ph.D., Professor of Chemistry. B.S., Siena Heights College, 1960; Ph.D., Purdue University, 1964. (1965-)

PATRICIA M. EWICK, Ph.D., Assistant Professor of Sociology. B.A., Tufts University, 1976; M.A., Yale University, 1977; M.Phil., 1978; Ph.D., 1985. (1990-)

PIUS CHUKWUKELU EZE, Ph.D., Assistant Professor of Economics. B.S.E.E., University of Wisconsin, Madison, 1982; M.A. University of Wisconsin, Milwaukee, 1984; Ph.D., University of Wisconsin, Madison, 1991. (1990-1993)

RACHEL JOFFE FALMAGNE, Ph.D., Professor of Psychology. License in Psychological Sciences, University of Brussels, 1961; Docteur en Sciences Psychologiques, 1967. (1973-)

JAMES P. FERDERER, Ph.D., Assistant Professor of Economics. B.A., The College of St. Thomas, 1983; M.A., Washington University, 1985; Ph.D., 1988. (1988-)

WILLIAM R. FERGUSON, Ph.D., Associate Professor of Spanish; Adjunct Associate Professor of English; Chair, Department of Foreign Languages and Literatures. A.B., Harvard College, 1965; A.M., Harvard University, 1970; Ph.D., 1975. (1979-)

RICHARD B. FORD, Ph.D., Professor of History; Co-director, International Development and Social Change Program. B.A., Denison University, 1957; M.A.T., Yale University, 1959; Ph.D., University of Denver, 1966. (1968-)

EVERETT FOX, Ph.D., Associate Professor of Jewish Studies. B.A., Brandeis University, 1968; M.A., 1972; Ph.D., 1975. (1987-)

JAMES P. GEE, Ph.D., Professor of Education. B.A., University of California, Santa Barbara, 1970; M.A., Stanford University, 1974; Ph.D., 1975. (1993-)

SUNHEE KIM GERTZ, Ph.D., Associate Professor of English. B.A., Carnegie Mellon University, 1973; M.A., State University of New York, Binghamton, 1977; Ph.D., University of Chicago, 1983. (1985-)

JOSEPH H. GOLEC, Ph.D., Associate Professor of Management. B.A., Trinity College, 1980; M.A., Washington University, 1982; Ph.D., 1986. (1986-)

HARVEY A. GOULD, Ph.D., Professor of Physics. B.A., University of California, Berkeley, 1960; Ph.D., 1966. (1971-)

BONNIE LEE GRAD, Ph.D., Associate Professor of Art History. B.A., Cornell University, 1971; Ph.D., University of Virginia, 1977. (1977-)

LAURA M. GRAVES, Ph.D., Assistant Professor of Management. B.A., College of William and Mary, 1977; M.A., University of Connecticut, 1980; Ph.D., 1982. (1989-)

WAYNE B. GRAY, Ph.D., Associate Professor of Economics. A.B., Dartmouth College, 1977; M.A., Harvard University, 1979; Ph.D., 1983. (1984-)

FREDERICK GREEN, Ph.D., Assistant Professor of Mathematics and Computer Science. B.S., Rensselaer Polytechnic Institute, 1973; M.S., Worcester Polytechnic Institute, 1979; Ph.D., Yale University, 1986. (1986-)

FREDERICK T. GREENAWAY, Ph.D., Professor of Chemistry; Chair, Gustaf H. Carlson School of Chemistry. B.Sc., University of Canterbury, New Zealand, 1969; Ph.D., 1973. (1980-)

JANETTE T. GREENWOOD, Ph.D., Assistant Professor of History. A.B., Kenyon College, 1977; M.A., University of Wisconsin, Madison, 1978; Ph.D., University of Virginia, 1991. (1991-)

BEVERLY C. GRIER, Ph.D., Assistant Professor of Government. M.A., Yale University, 1975; Ph.D., 1979. (1986-)

SHARON A. GRIFFIN, Ph.D., Assistant Professor of Education; Adjunct Assistant Professor of Psychology. B.A., McGill University, 1965; M.Ed., University of New Hampshire, 1970; Ph.D., University of Toronto, 1988. (1989-)

WENDY S. GROLNICK, Ph.D., Assistant Professor of Psychology. B.A., Cornell University, 1981; M.A., University of Rochester, 1984; Ph.D., 1987. (1991-)

SUSAN E. HANSON, Ph.D., Professor of Geography; Director, Graduate School of Geography. A.B., Middlebury College, 1964; M.S., Northwestern University, 1969; Ph.D., 1973. (1981-)

STANLEY R. HERWITZ, Ph.D., Associate Professor of Geography. B.A., New College of the University of South Florida, 1977; M.A., University of California, Berkeley, 1979; Ph.D., Australian National University, Canberra, 1983. (1984-)

SERENA S. HILSINGER, Ph.D., Professor of English; Chair, Department of English; Co-director, Women's Studies Program. B.A., Douglass College, Rutgers University, 1959; Ph.D., University of Connecticut, 1964. (1962-)

CHRISTOPH HOHENEMSER, Ph.D., Professor of Physics and Environment, Technology, and Society. B.A., Swarthmore College, 1958; Ph.D., Washington University, St. Louis, 1963. (1971-)

ROBERT C. HSU, Ph.D., Professor of Economics. B.A., National Taiwan University, 1960; M.A., Atlanta University, 1963; Ph.D., University of California, Berkeley, 1970. (1971-)

KENNETH HUGHES, Ph.D., Professor of German and Russian; Adjunct Professor of Theater Arts. A.B., Rutgers College, 1962; Ph.D., Rutgers University, 1967. (1973-)

H. WILLIAM JOHANSEN, Ph.D., Professor of Biology. B.A., San Jose State College, 1955; M.A., San Francisco State College, 1961; Ph.D., University of California, Berkeley, 1966. (1968-)

DOUGLAS L. JOHNSON, Ph.D., Associate Professor of Geography. B.A., Clark University, 1965; M.A., University of Chicago, 1968; Ph.D., 1971. (1973-)

FERN L. JOHNSON, Ph.D., Professor of English. B.A., University of Minnesota, 1968; M.A., Northwestern University, 1969; Ph.D., University of Minnesota, 1974. (1988-)

ALAN A. JONES, Ph.D., Professor of Chemistry; Adjunct Professor of Physics; Dean of Graduate Studies and Research. B.A., Colgate University, 1966; Ph.D., University of Wisconsin, 1972. (1974-)

JEFFREY R. JONES, Ph.D., Assistant Professor of Development Anthropology. M.A., University of California, Los Angeles; Ph.D., 1980. (1986-)

DAVID E. JOYCE, Ph.D., Associate Professor of Mathematics. B.S., University of Michigan, 1973; M.A., University of Pennsylvania, 1975; Ph.D., 1979. (1979-)

HARTMUT M. KAISER, Ph.D., Associate Professor of German; Adjunct Associate Professor of Screen Studies. B.A., Abendgymnasium, Hamburg, Germany, 1957; Ph.D., Brown University, 1968. (1971-)

BERNARD KAPLAN, Ph.D., Professor of Psychology; Adjunct Professor of Philosophy, Adjunct Professor of Comparative Literature. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D. 1953.(1953-)

GERALD J. KARASKA, Ph.D., Professor of Geography. B.S., Pennsylvania State University, 1954; M.A., George Washington University, 1957; Ph.D., Pennsylvania State University,1962. (1969-)

ROGER E. KASPERSON, Ph.D., Professor of Government and Geography; Provost. A.B., Clark University, 1959; M.A., University of Chicago, 1961; Ph.D., 1966. (1968-)

DOROTHY KAUFMANN, Ph.D., Associate Professor of French. B.A., University of Rochester, 1959; M.A., New York University, 1960; Ph.D., Columbia University, 1967. (1975-)

LINDA M. KENNEDY, Ph.D., Associate Professor of Biology; Adjunct Associate Professor of Psychology; A.B., Simmons College, 1975; R.N., Ph.D., Harvard University, 1979. (1983-)

JOHN F. KENNISON, Ph.D., Professor of Mathematics. B.S., Queens College, 1959; A.M., Harvard University, 1960; Ph.D., 1963. (1963-)

ROBERT W. KILMOYER JR., Ph.D., Associate Professor of Mathematics. B.A., Lebanon Valley College, 1961; Ph.D., Massachusetts Institute of Technology, 1969. (1966-)

WILLIAM A. KOELSCH, Ph.D., Professor of Geography and History. Sc.B., Bucknell University, 1955; A.M., Clark University, 1959; Ph.D., University of Chicago, 1966. (1963; 1967-)

ROGER P. KOHIN, Ph.D., Associate Professor of Physics. B.S.E.E., University of Notre Dame, 1953; Ph.D., University of Maryland, 1961. (1962-)

SHARON KREFETZ, Ph.D., Associate Professor of Government and International Relations; Dean of the College. A.B., Douglass College, 1967; M.A., Brandeis University, 1970; Ph.D., 1975. (1972-)

DONALD W. KRUEGER, M.F.A., Associate Professor of Art. B.F.A., Kansas City Art Institute, 1950; M.F.A., 1952; M.S., Rhode Island School of Design, 1960. (1972-)

JAMES D. LAIRD, Ph.D., Professor of Psychology; Chair Department of Psychology. B.A., Middlebury College, 1962; Ph.D., University of Rochester, 1966. (1966-)

CHRISTOPHER P. LANDEE, Ph.D., Professor of Physics; Adjunct Professor of Chemistry; Chair, Department of Physics. A.B., Kalamazoo College, 1967; M.S., University of Michigan, 1968; Ph.D., 1975. (1980-)

CATHERINE M. LEVESQUE, Ph.D., Assistant Professor of Art History. B.A., Barnard College, 1977; M.A., Columbia University, 1979; M.Phil., 1981; Ph.D., 1987. (1986-)

LAURENCE A. LEWIS, Ph.D., Professor of Geography. B.A., Antioch College, 1961; M.S., Northwestern University, 1963; Ph.D., 1964. (1970-)

STUART L. LICHT, Ph.D., Carl Julius and Anna (Kranz) Carlson Associate Professor of Chemistry. B.A., Wesleyan University, 1976; M.A., 1979; Ph.D., The Weizmann Institute of Science, Israel, 1985. (1988-)

DOUGLAS J. LITTLE, Ph.D., Associate Professor of History. B.A., University of Wisconsin, 1972; M.A., Cornell University, 1975; Ph.D., 1978. (1978-)

TODD P. LIVDAHL, Ph.D., Associate Professor of Biology. B.A., St. Olaf College, 1973; Ph.D., University of North Carolina, 1978. (1980-)

BRUCE LONDON, Ph.D., Professor of Sociology. B.A., Bates College, 1968; M.A., University of Connecticut, Storrs, 1973; Ph.D. 1977. (1990-)

PAUL LUCAS, Ph.D., Associate Professor of History. B.A., Brandeis University, 1955; M.A., Princeton University, 1957; Ph.D., 1963. (1969-)

TIMOTHY A. LYERLA, Ph.D., Professor of Biology. B.S., University of California, 1963; M.A., San Diego State College, 1967; Ph.D., Pennsylvania State University, 1970. (1971-)

DREW R. McCOY, Ph.D., Jacob and Frances Hiatt Professor of History; Chair, Department of History. A.B., Cornell University, 1971; M.A., University of Virginia, 1973; Ph.D., 1976. (1990-)

DEBORAH M. MERRILL, Ph.D., Assistant Professor of Sociology. B.A., Bowdoin College, 1984; M.A., Brown University, 1988; Ph.D., 1991. (1992-)

SARAH MICHAELS, Ph.D., Associate Professor of Education; Director of The Jacob Hiatt Center for Urban Education; Chair, Department of Education. B.A., Barnard College, 1975; M.A., University of California, Berkeley, 1976; Ph.D.,1981. (1991-)

DALE F. MIERKE, Ph.D., Assistant Professor of Chemistry. B.Sci., University of California, Irvine, 1984; M.Sci., University of California, San Diego, 1986; Ph.D., 1988. (1993-)

MARK C. MILLER, Ph.D., Assistant Professor of Government and International Relations. B.A., Ohio Northern University, 1980; J.D., George Washington University, 1983; M.A., Ohio State University, 1989; Ph.D., 1990. (1990-)

ROBERT C. MITCHELL, Ph.D., Professor of Geography. B.A., The College of Wooster, Ohio, 1957; M.Div., Union Theological Seminary, 1960; M.A., Northwestern University, 1965; Ph.D., 1970. (1987-)

HAROLD T. MOODY, Ph.D., Associate Professor of Management. B.S., University of California, Los Angeles, 1959; M.B.A., 1960; Ph.D., 1964. (1969-)

LAWRENCE E. MORRIS, Ph.D., Associate Professor of Mathematics. B.S., University of Sydney, 1969; M.S., 1971; Ph.D., Cambridge University, 1975. (1979-)

RAYMOND J. MUNRO, M.A.H., Associate Professor of Theater Arts. B.A., Columbia College, 1973; M.A.H. in Theater, State University of New York, Buffalo, 1977. (1979-)

DONALD J. NELSON, Ph.D., Professor of Chemistry; Adjunct Professor of Biology. B.S., Rutgers University, 1967; Ph.D., University of North Carolina, 1972. (1975-)

ATTIAT F. OTT, Ph.D., Professor of Economics; Director of the Institute for Economic Studies. B.A., Cairo University, 1956; Ph.D., University of Michigan, 1962. (1969-)

EDWARD J. OTTENSMEYER, Ph.D., Associate Professor of Management. B.A., Marian College; M.B.A., Indiana University; Ph.D., 1982. (1986-)

GARY E. OVERVOLD, Ph.D., Associate Professor of Philosophy. A.B., St. Olaf College, 1962; Ph.D., Claremont Graduate School, 1965. (1969-)

MICHAEL PAKALUK, Ph.D., Assistant Professor of Philosophy. A.B., Harvard College, 1980; M.Litt, University of Edinburgh, 1982; Ph.D., Harvard University, 1988. (1988-)

RICHARD PEET, Ph.D., Professor of Geography. B.Sc., University of London, 1961; M.A., University of British Columbia, 1963; Ph.D., University of California, Berkeley, 1968. (1967-)

FRANK W. PUFFER, Ph.D., Professor of Economics; Chair, Department of Economics. B.S., Brown University, 1960; Ph.D., 1965. (1968-)

KNUD RASMUSSEN, Ph.D., Associate Professor of Government and International Relations. B.A., Copenhagen University, 1953; M.A., Cornell University, 1960; Ph.D., Rutgers University, 1964. (1966-)

JOHN T. REYNOLDS, Ph.D., Professor of Microbiology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1955; Ph.D., 1962; M.P.H., Harvard University, 1978. (1956-)

RONALD K. RICHARDSON, Ph.D., Assistant Professor of History. B.A., State University of New York, Binghamton, 1973; M.A., 1975; Ph.D., 1983. (1989-)

DIANNE E. ROCHELEAU, Ph.D., Assistant Professor of Geography. B.A., University of South Florida, Tampa, 1973; M.A., 1976; Ph.D., University of Florida, Gainesville, 1983. (1989-)

PAUL S. ROPP, Ph.D., Professor of History. B.A., Bluffton College, 1966; M.A., University of Michigan, 1968; Ph.D., 1974. (1984-)

ROBERT J. S. ROSS, Ph.D., Professor of Sociology; Chair, Department of Sociology. B.A., University of Michigan, 1963; M.A., University of Chicago, 1966; Ph.D., 1975. (1972-)

LEE RUDOLPH, Ph.D., Associate Professor of Mathematics and Computer Science; Chair, Department of Mathematics and Computer Science. A.B., Princeton University, 1969; Ph.D., Massachusetts Institute of Technology, 1974 (1986-)

WALTER SCHATZBERG, Ph.D., Professor of German; Adjunct Professor of Screen Studies; Director, Clark European Center in Luxembourg. B.A., St. John's College, Maryland, 1954; M.A., Johns Hopkins University, 1957; Ph.D., 1966. (1966-)

THOMAS A. SCHOENFELD, Ph.D., Assistant Professor of Psychology; Adjunct Assistant Professor of Biology; Director, Neuroscience Program. B.A., Lawrence University, 1971; M.S., Rutgers University, 1973; Ph.D., 1978. (1988-)

NEIL R. SCHROEDER, Ph.D., Associate Professor of Theater Arts. A.B., Brown University, 1952; Ph.D., Yale University, 1962. (1960-)

ZENOVIA A. SOCHOR, Ph.D., Associate Professor of Government and International Relations. B.A., University of Pennsylvania, 1965; M.S., London School of Economics, 1966; Ph.D., Columbia University, 1977. (1980-)

CHRISTINA SOMMERS, Ph.D., Associate Professor of Philosophy. B.A., New York University, 1973; Ph.D., Brandeis University, 1979. (1980-)

MICHAEL K. SPINGLER, Ph.D., Associate Professor of French; Adjunct Associate Professor of Screen Studies. B.A., Dartmouth College, 1959; M.A., University of Pittsburgh, 1961; Ph.D., 1966. (1972-)

MARC W. STEINBERG, Ph.D., Assistant Professor of Sociology. A.B., The Johns Hopkins University, 1978; M.S., 1978; Ph.D., University of Michigan, 1989. (1991-)

NATALIA STERNBERG, Ph.D., Associate Professor of Mathematics and Computer Science. M.Sc., University of Cologne, West Germany, 1979; M.Sc., Brown University, 1982; Ph.D., 1985. (1987-)

DAVID A. STEVENS, Ph.D., Professor of Psychology. A.B., University of California, Berkeley, 1954; M.A., University of Oregon, 1963; Ph.D., 1965. (1965-)

HENRY J. STEWARD, Ph.D., Associate Professor of Geography. B.Sc., University of London, 1962; Ph.D., University of Wales (Swansea), 1972. (1978-)

STANLEY SULTAN, Ph.D., Professor of English. A.B., Cornell University, 1949; A.M., Boston University, 1950; Ph.D., Yale University, 1955. (1959-)

R.P. SUNDARRAJ, Ph.D., Assistant Professor of Management. B.S., University of Madras, India; M.S., University of Tennessee, Knoxville; Ph.D., 1990. (1989-)

MAURRY TAMARKIN, Ph.D., Associate Professor of Management. A.B., Washington University, 1961; Ph.D., 1979. (1981-)

STEFAN TANAKA, Ph.D., Assistant Professor of History. B.A., Linfield College, 1974; M.A., University of Washington, Seattle, 1977; Ph.D., University of Chicago, 1986. (1989-)

SHELLY TENENBAUM, Ph.D., Associate Professor of Sociology; Adjunct Assistant Professor of Jewish Studies; Acting Director, Jewish Studies Program. B.A., Antioch University, 1977; Ph.D., Brandeis University, 1986. (1986-)

BARBARA P. THOMAS-SLAYTER, Ph.D., Associate Professor of International Development; Adjunct Associate Professor of Government; Co-director, International Development and Social Change Program. B.A., Bryn Mawr College, 1958; M.Ed., Harvard Graduate School of Education, 1968; Ph.D., Brandeis University, 1981. (1980-)

NICHOLAS S. THOMPSON, Ph.D., Professor of Psychology and Ethology. B.A., University of California, Berkeley, 1961; Ph.D., 1966. (1970-)

DAVID THURLOW, Ph.D., Associate Professor of Chemistry; Director, Biochemistry and Molecular Biology Program. B.A., Bowdoin College, 1971; M.S., University of Maine, Orono, 1974; Ph.D., University of Massachusetts, Amherst, 1981. (1985-)

RHYS F. TOWNSEND, Ph.D., Associate Professor of Art History. B.A., University of North Carolina, 1974; Ph.D., 1982. (1982-)

EDWARD N. TRACHTENBERG, Ph.D., Professor of Chemistry; Coordinator of Professional Placement. A.B., New York University, 1949; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)

MARK M. TURNBULL, Ph.D., Associate Professor of Chemistry. B.S., University of New Hampshire, 1978; M.S., 1984; Ph.D., Brandeis University, 1986 (1986-)

B. L. TURNER II, Ph.D., Professor of Geography; Director, George Perkins Marsh Institute. B.A., University of Texas, 1968; M.A., 1969; Ph.D., University of Wisconsin, 1974. (1979-)

ROBERT A. ULLRICH, Ph.D., Professor of Management; Dean, Graduate School of Management. B.S., United States Merchant Marine Academy, 1960; M.B.A., Tulane University, 1964; Ph.D., Washington University, 1968. (1988-)

INA C. UZGIRIS, Ph.D., Professor of Psychology. B.S., University of Illinois, 1957; M.A., 1960; Ph.D., 1962. (1966-)

ROGER C. VAN TASSEL, Ph.D., Professor of Economics. A.B., Union College, 1947; A.M., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)

VIRGINIA M. VAUGHAN, Ph.D., Professor of English; Director, Higgins School of Humanities; Co-director, Women's Studies Program. B.A., Occidental College, 1968; M.A., University of Michigan, 1970; Ph.D., 1972. (1976-)

EMIEL C. VEENDORP, Ph.D., Professor of Economics. B.A., University of Groningen, 1960; Ph.D., Rice University, 1963. (1976-)

DAVID F. VENTURO, Ph.D., Assistant Professor of English. A.M., Rutgers College, 1977; A.M., Harvard University, 1981; Ph.D., 1986. (1989-)

DANIEL A. VERREAULT, Ph.D., Assistant Professor of Management. B.A., University of Massachusetts, 1968; M.S.A., Northeastern University, 1972; Ph.D., Texas A&M University, 1984. (1991-1994)

ROBERT VITALIS, Ph.D., Assistant Professor of Government. B.A., State University of New York, Stony Brook, 1978; S.M., Massachusetts Institute of Technology, 1984; Ph.D., 1989. (1991-)

MARTINE VOIRET, Ph.D., Assistant Professor of French. B.A., Université d'Amiens, 1978; M.A., Duke University, 1982; M.A., The Johns Hopkins University, 1986; Ph.D., 1990. (1989-)

MAURICE D. WEINROBE, Ph.D., Professor of Economics. B.S., Bradley University, 1964; Ph.D., Cornell University, 1969. (1976-)

WEN-YANG WEN, Ph.D., Professor of Chemistry. B.S., National Taiwan University, 1953; Ph.D., University of Pittsburgh, 1958. (1962-)

JAMES V. WERTSCH, Ph.D., Professor of Psychology; Director, Communications Program. A.B., University of Illinois, Urbana, 1969; M.A.T., Northwestern University, 1971; Ph.D., University of Chicago, 1975. (1987-)

MARIANNE WISER, Ph.D., Associate Professor of Psychology. Engineer in Physics, 1972; Bachelor in Oceanography, University of Leige, Belgium, 1973; Ph.D., Massachusetts Institute of Technology, 1981. (1981-)

WALTER E. WRIGHT, Ph.D., Associate Professor of Philosophy. B.A., Yale University, 1965; M.A., Vanderbilt University, 1967; Ph.D., 1971. (1968-)

JUE XUE, Ph.D., Assistant Professor of Management. B.S., Institute of Technology, Zhenzhou, China, 1982; M.S. Institute of System Science, Academic Sinica, Beijing, China, 1985; M.S., Carnegie Mellon University, 1987; Ph.D., 1991. (1991-)

DAVID ZERN, Ph.D., Associate Professor of Education; Adjunct Associate Professor of Psychology. B.A., Harvard University, 1962; Ed.M., 1964; Ph.D., 1969. (1971-)

The Corporation

As of July 1, 1993

OFFICERS

David H. Strassler, B.A., chair, Great Barrington, MA
Robert J. Hurst, M.B.A., vice chair, New York, NY
Melvin M. Rosenblatt, B.B.A., vice chair, Worcester, MA
Edward H. Abrahams, Ph.D., assistant secretary, Holden, MA
James E. Collins, M.B.A.,treasurer, Shrewsbury, MA
Albert A. LePage, B.S.B.A., assistant treasurer, Auburn, MA
Anthony F. Stepanski, B.A., vice chair, Westfield, NJ
Stephen Steinbrecher, J.D., secretary, Weston, CT

LIFE MEMBERS

Jacob Hiatt, A.M., Worcester, MA
Alice C. Higgins, L.H.D., Worcester, MA
Richard W. Mirick, LL.B., Princeton, MA
Sumner B. Tilton Jr., J.D., Worcester, MA

TERM MEMBERS

Norman B. Asher, LL.B., Auburndale, MA
Alfred F. Boschulte, M.A., Pleasantville, NY
Elizabeth Cohen, Ph.D., Stanford, CA
Steve C. Dune, J.D., New York, NY
Michael I. Freedman, B.A., New York, NY
Allen M. Glick, B.S.B.A., Framingham, MA
James H. Harrington, B.A., Worcester, MA
Robert J. Hurst, M.B.A., New York, NY
Mary H. Melville, M.A., Worcester, MA
Alceste Pappas, Ph.D., New York, NY
Lydia M. Pastuszek, B.A., Newton, MA
Edgenie H. Rice, A.B., New York, NY
Melvin M. Rosenblatt, B.B.A., Worcester, MA
Morton H. Sigel, B.B.A., Northborough, MA
Sherwood T. Small, M.B.A., New London, NH
Stephen Steinbrecher, J.D., Weston, CT
Anthony F. Stepanski, B.A., Westfield, NJ
David H. Strassler, B.A., Great Barrington, MA
Ronald A. Walter, M.A., Memphis, TN

ALUMNI MEMBERS

Thomas J. Anton, Ph.D., Providence, RI
Bonnie F. Carter, B.A., Wynnewood, PA
Elaine Cinelli, B.A., Chatham, NJ
Eleanor S. Erickson, B.A, Lexington, MA
Perry R. Pero, M.B.A., Oak Park, IL
Ronald M. Shaich, M.B.A., Cambridge, MA

HONORARY MEMBERS

Fairman C. Cowan, LL.B., Worcester, MA
George D. DeRado, B.B.A., Montecito, CA
Roland A. Erickson, M.A., Naples, FL
John Jeppson, M.B.A., Worcester, MA
Robert K. Massey, LL.D., Jaffrey, NH
Stephen T. Riley, Ph.D., Weston, MA
Edward A. Smith, J.D., Kansas City, MO

Academic and Administrative Officers

RICHARD P. TRAINA, Ph.D., President

ACADEMIC AFFAIRS

- **Roger E. Kasperson, Ph.D., Provost, Professor of Government and Geography**
- **Alan A. Jones, Ph.D., Dean of Graduate Studies and Research, Professor of Chemistry, Adjunct Professor of Physics**
- **Sharon Perlman Krefetz, Ph.D., Dean of the College, Associate Professor of Government and International Relations**
- **Kevin M. McKenna, Ed.D., Associate Dean of the College, Director of Academic Advising Center**
- **Thomas P. Massey, Ph.D., Dean, College of Professional and Continuing Education, Adjunct Professor of History**
- **Robert A. Ullrich, D.B.A., Dean of the Graduate School of Management, Professor of Management**

STUDENT SERVICES

Catherine Maddox-Wiley, M.Ed., Dean of Students
David Milstone, M.Ed., Assistant Dean of Students–Housing and Residential Programs
Linda E. Brown, M.A., Assistant Dean of Students, Director of the University Center
Director of Career Services being selected at time of publication
Lynda Garow, M.Ed., Assistant Director of Career Services–M.B.A. Services
John J. Paganelli Jr., B.A., Assistant Director of Career Services–Internships
Assistant Dean of Students for Multicultural Affairs being selected at time of publication
Susan Edinberg, M.A., Coordinator of Office of International Students and Scholars
Linda Freedman, M.Ed., Director of Craft Studio
Heidi J. Cox, M.A., Assistant Director of Housing

ADMISSIONS

Richard W. Pierson, A.M., Dean of Admissions
Kristin R. Tichenor, B.A., Associate Dean and Director of Admissions
Joan McDonald, M.Ed., Associate Dean of Admissions–Campus Services
Cindi A. Assad, B.A., Admissions Counselor
Ronald N. Beck, M.A., Associate Director of Admissions
Allan Brown, B.A., Assistant Director of Admissions
Shirley L. Bussolari, Manager of Admissions Operations
Carol Easton, M.A.T., Coordinator of Alumni Admissions
Eugene A. Gabay, B.A., Assistant Director of Admissions

FINANCIAL ASSISTANCE AND STUDENT EMPLOYMENT

Peter M. Giumette, B.S., Director, Office of Financial Assistance
Lynne M. Elie, B.S., Associate Director
Nancy E. O'Connor, B.S.G.S., Assistant Director

INSTITUTIONAL STUDIES AND STUDENT RECORDS

Albert C. Lefebvre, M.Ed., Director, Office of Institutional Studies and Student Records
Rebecca S. Ikehara, M.A., Associate Director
Maureen A. Jones, Assistant to the Associate Director

AFFIRMATIVE ACTION

Affirmative Action Officer, Sexual Harassment Grievance Counselor position to be filled

GOVERNMENT RELATIONS

Edward H. Abrahams, Ph.D., Executive Assistant to the President, Director of Government Relations, and Assistant Secretary to the Board of Trustees

COLLEGE OF PROFESSIONAL AND CONTINUING EDUCATION

Thomas P. Massey, Ph.D., Dean, Adjunct Professor of History
Joan Menard, M.S.I.S., Assistant Dean
Joanne DeMoura, M.Ed., Director, Student Services
Donnelle Eargle, Ph.D., Director, Graduate Studies and Noncredit Programs
Julia A. Parent, B.A., Graduate Studies Coordinator, Media Relations Director
James Raby, Ed.M., Director, American Language and Culture Institute
Maureen Stephens, M.A., Director, Teachers Center for Global Studies
Mary Toohey, Financial Manager

GRADUATE SCHOOL OF MANAGEMENT

Robert A. Ullrich, D.B.A., Dean of the Graduate School of Management, Professor of Management
Robert C. Bradbury, Ph.D., Director of M.H.A. Program
Maureen Breen, B.A., Assistant Dean for Administration
Mary Gamache, Coordinator for Registration and Student Accounts
Laurence W. Marsh, M.B.A., Director of Small Business Development Center
Jane P. Reno, M.Ed., Assistant Dean for Academic Affairs
Lynn D. Terrell, M.B.A., Director of Admissions

LIBRARY

Susan S. Baughman, D.L.S., University Librarian
Mary S. Anderson, M.L.S., Head of Technical Services
D. Page Cotton, M.L.S., Cataloguer
Tatiana Durilin, M.L.S., Science Librarian
Mary M. Hartman, M.L.S., Head of Public Services
Barbara C. Ingrassia, M.L.S., Senior Cataloguer
Edward J. McDermott, M.L.S., Reference Librarian
Dorothy Mosakowski, Coordinator of Archives and Special Collections
Beverly Presley, M.L.S., Map Librarian
Cynthia Shenette, M.L.S., Archives/Reference Librarian
Irene W. Walch, M.L.S., Reference Librarian

MEDIA SERVICES

Christopher L. Hardin, Ed.D., Director of Media Services

OFFICE OF INFORMATION SYSTEMS

Jerry L. Olson, B.A., Director, Office of Information Systems
James F. Allison, B.S., Information Center Consultant
Christina M. Lloyd, A.A., Programmer/Analyst
Irene J. Meleski, Assistant to the Director
Clark A. Perry, A.A., Coordinator of Operations and Maintenance
Beth A. Savage, B.A., Information Center Consultant
Max D. Schopf, Assistant Manager, Systems/Network
Anna M. Tomecka, M.S., Manager, Systems/Network
Susan J. Tucker, B.S., Manager, Administrative MIS Systems

ACADEMIC ADVISING

Kevin M. McKenna, Ed.D., Associate Dean of the College/Director of Academic Advising Center
Martin J. Patwell, Ed.D., Associate Director of Academic Advising/Special Needs
Leone C. Scanlon, Ph.D., Director of the Writing Center
Uwe Gertz, M.A., Coordinator, Office of Study Abroad Programs

ADMINISTRATION AND FINANCE

James E. Collins, M.B.A., Vice President for Administration and Finance, Treasurer of the Board of Trustees
Danielle Cove, Administrative Assistant in the Office of Administration and Finance
John L. Foley, B.A., Business Manager
Patricia M. Handrahan, B.S.B.A., Associate Controller
Albert A. LePage, B.S., B.A., Controller and Assistant Treasurer
Lynn F. Olson, M.B.A., Director of Personnel
Joan Scott, B.S., Staff Accountant
Linda Stekeur, B.S.P.A., Assistant Controller
Julie A. Wolfenden, B.S., Assistant Director of Personnel

ATHLETICS AND RECREATION

Linda S. Moulton, M.Ed., Director of Athletics and Recreation
Anne Marie DeMorris, B.A., Athletic Trainer, L.A.T.C.
Richard H. Fairbanks, Building Supervisor, Kneller Athletic Center
Patricia J. Glispin, M.Ed., Head Coach of Women's Basketball/Director of Physical Education
Lawrence Mangino, B.S., Head Coach of Men's Basketball
Pamela E. Moore, Administrative Assistant
Kevin Salisbury, M.S., Head Swim Coach/Aquatic Director
Kathryn D. Smith, B.A., Sports Information Director, Assistant Field Hockey Coach
Kurt Swanbeck, M.Ed., M.A., Head Coach of Men's Soccer/Director of Intramurals
Linda J. Wage, B.A., Head Coach of Field Hockey, Assistant Coach of Women's Basketball

CAMPUS POLICE

Stephen Goulet, Chief of Campus Police

PHYSICAL PLANT

Paul R. Bottis Jr., B.S.B.A., Director of Physical Plant
Mark Ahearn, B.A., Grounds Supervisor
Alexander Roy Cordy, Chief Engineer/Energy Manager
Marie Farina, A.B.A., Maintenance Coordinator
Wallace E. Guertin, Assistant Director/Maintenance and Construction
Gregg R. Janda, A.S., Assistant Director/Custodial and Housekeeping Services
Derek E. Lundstrom, Assistant Director/Electrical Systems and Telephone
Shirley F. Riopel, Assistant Director/Administration

ALUMNI AFFAIRS AND PLANNED GIVING

Thomas M. Dolan, J.D., Vice President for Alumni Affairs and Planned Giving
Kathryn Spellman, B.A., Director of Alumni Affairs
William Bennett, B.A., Associate Director of Alumni Affairs
Laurie A. Kennedy, Assistant to Vice President of Alumni Affairs and Planned Giving
Director of Planned Giving being selected at time of publication

UNIVERSITY RESOURCES AND DEVELOPMENT

Frederick E. Regan, B.A., Associate Vice President for Development
Del-Marie Bachand, A.A., Assistant Director of Development Operations
Joseph H. Escovitz, Ph.D., Director of Foundation and Corporate Relations
Pauline J. Gaudette, Development Assistant
Michael P. Murphy, Assistant Director of Development Information Systems
Margaret M. Twiss, M.S.M.A., Director of Prospect Research
Marilyn A. Uber, B.S.B.A., Major Gifts Development Officer

THE CLARK FUND

Charles L. Guida, Director of the Clark Fund
Kathleen P. Dunlee, B.A., Associate Director of the Clark Fund
Lisa C. Maizite, B.A., Assistant Director of the Clark Fund
Kathleen F. Vipond, A.A., Assistant to the Director of the Clark Fund

CLARK COMMUNICATIONS

Katherine L. Chesley, B.A., Director of Communications
Kristina N. Allen, M.A.L.A., Assistant Director of Communications
Jeffrey L. Busha, B.S., Media Relations Officer
Jeanne Blum Kissane, B.A., Assistant Director of Communications
Odette L. Meola, B.S., Manager of Publications/Creative Services
Ellen Prihodko, B.A., Associate Director of Communications

ACADEMIC CALENDAR–1993-1994

FALL SEMESTER 1993

August 26	New international and early arrival students' Orientation
August 28	Start of Orientation for first-year and transfer students Residences open for new students only.
August 29–31	Orientation continues.
August 30	Residences open at 9 a.m. for continuing students.
August 31	Registration for undergraduate students
September 1	First day of classes (a University Monday: students and faculty follow Monday class schedule.) Convocation at 4 p.m., Atwood Hall
September 6	Labor Day: a holiday (no classes)
October 8–10	Parents Weekend
October 21–24	Midterm break begins after last class Wednesday, October 20.
October 25	Classes resume.
November 8–19	Registration for spring semester for continuing undergraduates
November 23	Thanksgiving recess begins after last class.
November 29	Classes resume.
December 10	Last day of classes
December 13	Reading day
December 14–18	Fall semester final examinations
December 18	Winter recess begins after last exam.
December 19	Residences close at 5 p.m.

SPRING SEMESTER 1994

January 16	Residences open at 9 a.m.
January 17	Registration for undergraduate students University Day Program at 4 p.m., Atwood Hall
January 18	First day of classes
March 11	Spring recess begins after last class.
March 21	Classes resume.
April 11–22	Registration for fall semester for continuing undergraduates
May 2	Last day of classes
May 3–4	Reading days
May 5–6 and 9–11	Spring semester final examinations
May 12	Residences close at 5 p.m. for non-graduating students; May 23 for degree recipients.
May 22	Commencement

Non-profit Org.
U.S. Postage
PAID
Permit 1886
Worcester, Mass.

CLARK UNIVERSITY
950 Main Street Worcester Massachusetts 01610-1477

April 1

May 2
May 3–4
May 5–6 and 9–11
May 12
Re
May 25
May 22
Commenceme